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PREHISTORIC ANTIQUITIES

OF THE

ARYAN PEOPLES:

A MANUAL OF COMPARATIVE PHILOLOGY AND THE EARLIEST CULTURE.

BEING THE

"SPRACHVERGLEICHUNG UND URGESCHICHTE"

OF

DR O. SCHRADER.

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TRANSLATED BY

FRANK BYRON JEVONS, M.A.,

TUTOR IN THE UNIVERSITY OF DURHAM; AUTHOR OF "A HISTORY OF GREEK LITERATURE"; "DEVELOPMENT OF THE ATHENIAN DEMOCRACY."

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language is by no means blind to the difficulties which beset his task, but on the contrary is fully conscious of the need of always supporting the conclusions of Etymology by the observations of History and Archæology.

The work now turns from the historical and theoretical side of the question to the actual investigation of the Primeval Age, and begins with an exhaustive examination of one of the chief and cardinal points in the primeval history of the Indo-Europeans—the question whether the Indo-Europeans before their dispersion were or were not acquainted with the Metals. This inquiry, which I am brought to answer in the negative, proves to be intimately involved with the further question—Whence and in what way acquaintance with the Metals, if unknown to the Primeval Period, spread amongst the Indo-European peoples in later times? For the solution of this difficult problem I believe that I have collected what linguistic data there are, without losing sight of History and Archæology.

This seemed to give a base-line, satisfactory alike from the point of view of theory and of facts, from which we might venture to grasp the multitude of linguistic and historic facts bearing on prehistoric research, which are presented by the various Indo-European peoples. The book concludes, accordingly, with an attempt to portray the Primeval Indo-European Period as a whole in a series of pictures representing its most important phases—The Animal Kingdom, Cattle, The Plant-World, Agriculture, Computation of Time, Food and Drink, Clothing, Dwellings, Traffic and Trade, The Culture of the Indo-Europeans, and The Prehistoric Monuments of Europe (especially the Swiss Lake-Dwellings), Family and State, Religion, The Original Home.

The last-named chapter, that which deals with the original home of the Indo-European race, alone requires a few further words. It is this problem which in England has of late been the subject of considerable discussion (*cf.* on this point especially Van den Gheyn, *L'Origine Européenne des Aryas*, Paris, 1889): and two further works dealing mainly with this question have appeared

p. 22, January 4, 1890): "The philological arguments, proving from words common to Aryan tongues, that the undivided Aryans have this or that institution, or custom, or piece of knowledge in common, seems to us of very slight importance. In the dark backward and abysm of time, words have been so shifted, added to, dropped, cut, and shuffled, that real historical knowledge based on terms of speech is next to impossible."

since the completion of this book.* In this discussion very great weight, and, if I am not mistaken, too great weight, has been given to K. Penka's two works (*Origines Ariacæ*, 1883, and *Die Herkunft der Arier*, 1886). I am not blind to the value of the numerous new points of view which Penka has proposed for determining the relation between race and language. On the other hand, I, like Max Müller, cannot close my eyes to the many mistakes into which Penka has fallen, at any rate in the employment of his philological and historical materials. The impossibility of attaining to any result on the lines laid down by Penka, in the present state of Anthropology, is dealt with by me on pp. 35, 82, *f.*, of this book.

My opinion is that the last word has not yet been spoken on this question. Anyhow, fresh works on this subject will speedily be forthcoming. Thus, Johannes Schmidt pointed out at the Seventh International Congress of Orientalists, held at Stockholm, that the numeral systems of the European languages frequently betray indications that the decimal notation is crossed by a duodecimal or sexagesimal system. "With much acuteness," says the report (cf. *Deutsche Rundschau*, p. 227, No. 3, 1889–90), "the speaker tried to show it was probable that we have here the influence of the Babylonian mode of measuring space and time, which is based on the numeral 60; a hypothesis, the importance of which for the question as to the prehistoric abode of the European peoples, and consequently of the original Indo-European home, is manifest." J. Schmidt will publish his views and the arguments in support of them in a special treatise.

From another side, the question of the connection between the Indo-European peoples and the Finnish peoples in prehistoric times —a question of the highest importance for our problem—is to be discussed anew.

I therefore beg that the attempt here made to localise the home of the Indo-Europeans may be regarded as merely tentative, and that it may receive an unprejudiced and careful consideration.

I cannot conclude this Preface without expressing my heartfelt thanks to the Translator of the work, Mr F. B. Jevons. Mr Jevons had already completed his translation of the First Edition, and prepared it for the press, when the necessity for a

* *The Cradle of the Aryans*, by Gerald H. Rendal, London, 1889, and *The Origin of the Aryans: an Account of the Prehistoric Ethnology and Civilisation of Europe*, by Canon I. Taylor, London, 1889.

Second Edition presented itself, and the Second Edition has grown into an almost entirely new work. Mr Jevons, nevertheless, with the greatest self-sacrifice undertook the task thus imposed of retranslating the work. If any reader, therefore, lays down the book with a feeling of satisfaction, much of his thanks will be due to Mr Jevons.

O. Schrader.

Jena, *March* 1890.

TRANSLATOR'S NOTE.

Dr Schrader omits to state that he very kindly volunteered to look through the proof-sheets of the Translation with a view to ensuring the correctness of the many words which he cites from all Indo-European (and sundry other) languages. And although Dr Schrader is in no way responsible for the correctness of the Translation, still I have been able to consult him whenever I was in doubt as to his meaning; and as he has read all the proofs, I do not think it likely that any mistakes have escaped our joint efforts.

F. B. Jevons.

The University, Durham.

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ADDENDA AND CORRIGENDA.

NOTE.

The Indo-European guttural-series is represented (in accordance with K. Brugmann's *Grundriss*) by *k, g, gh* (palatals), and *q, g, gh* (velar); the syllabic nasals and liquids by *n, m, l, r*.

PART I.

P. 80, *Note*.—"L'Origine européenne des Aryas. Mémoire présenté au Congrès scientifique international des Catholiques tenu à Paris en 1888," par Van den Gheyn, Paris, 1889, is instructive on the history of the home question.

P. 103.—Sayce inclines of late, apparently, more and more to Penka's hypothesis. *Cf.* V. d. Gheyn, *loc. cit.*, p. 10.

P. 105.—Amongst the champions of the kinship of the Finns and the Indo-Europeans we should have mentioned Nicolai Anderson, "Studien zur Vergleichung der indogermanischen und finnisch-ugrischen Sprachen," in the *Verh. d. Gel. estn. Ges. zu Dorpat*, Bd. ix. (Dorpat, 1879) and Fr. Th. Koppen, *Beiträge zur Frage ueber die Urheimat und Verwandtschaft der Indoeuropaer und Finnen*, St. Petersburg, 1886 (in Russian).

PART II.

P. 216.—Delbrück calls my attention to the form *βόλμος* (*Sammd. d. griech. Dial. Inschriften von Collitz*, iii. 3, p. 149).

PART IV.

P. 274.—A. Fick (*B. B.*, xvi. p. 171) compares Lith. *usis* "ash" with Lat. *ornus* (**osinus*), which is very likely.

P. 370.—The full title of Delbrück's work is *Die indogermanischen Verwandtschaftsnamen, ein Beitrag zur vergleichenden Altertumskunde* (Leipzig, S. Hirzel, 1889). On Delbrück's agreement with me, see p. 28 (406) and p. 212 (590) of this work.

P. 436.—H. Brunnhofer, in his book *Iran und Turan* (Leipzig, 1889), which is designed to explain a very considerable number of geographical names in the Rigveda by reference to Iranian localities, goes very much further.

Owing to the difficulties of the subject, and the distance between author and printer, it is possible that some few misprints may have escaped detection in the case of the Indo-European and other words cited. The reader is requested to consult the Index in case of doubt.

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PREHISTORIC ANTIQUITIES.

PART I.

THE HISTORY OF LINGUISTIC PALÆONTOLOGY.

CHAPTER I.

THE BEGINNINGS OF LINGUISTIC PALÆONTOLOGY.

Eighteenth century views about the linguistic and ethnological relationship of nations can nowhere be better or more comprehensively studied than in the numerous writings of the most learned and distinguished student of language of that period, Johann Christoph Adelung. His principal work *Mithridates, or the General Science of Language* (*Mithridates oder allgemeine Sprachenkunde*, 1806–1816, from the second part onwards continued by J. S. Vater from Adelung's papers, 3 vols., Berlin), stands midway between the old science of language and the new, and may be designated as a continuation, only more thorough and more methodical, of the idea of a universal glossary, which was suggested by Leibnitz, and first carried into execution in the St Petersburg Dictionary of the Czarina Katherine. The design at the bottom of this idea, viz., to establish the mutual relations of nations by means of a comparison of their languages, is characteristic of the position then filled by the science of language, which was little more than that of handmaiden to ethnology. But the criterion of these comparisons was not, as in the St Petersburg Dictionary and elsewhere, collections of individual words, for Adelung does not attempt to conceal his grave suspicions of them (*cf.* Preface, p. viii). On the strength of the large number of translations in existence,* the Lord's Prayer in nearly five hundred languages and dialects was taken as the test of language, on the ground that only by means of a continuous piece of human speech is it possible to follow

* The person who first had the idea of using the Lord's Prayer as a test of language was J. Schildberger, about 1477. On the collections of the L. P., see *Mithridates*, i. p. 646 *seq.*

the movement and spirit of a language, and, above all, to trace its structure, external and internal (*cf.* Preface, p. xii).

Our interest in this work, which may be read not without profit to this day, lies principally in the author's views of the relationship of the European and Asiatic peoples, and particularly of those among them which have been grouped together under the name of Indo-European. To begin with, the fatal error that the language of the Bible must be regarded as the original language of mankind, an error first energetically combated by Leibnitz, may be regarded as vanquished. Even in his work, *On the History of the German Language* (*Über die Geschichte der deutschen Sprache*), &c., which appeared at Leipzig in 1781, Adelung says, in the Introduction, p. 10: "People have at all times given themselves a great deal of unnecessary trouble in trying to find out what was the first language in the world, because they believed that then it must be very easy to derive all the other languages from it. . . . Hebrew is certainly the oldest language of which we have any considerable remains; but it is not therefore the most ancient," and he adds, in the Preface to the *Mithrid.*, p. 11: "I do not derive all languages from a single one; Noah's ark to me is a closed fortress, and the ruins of Babylon need fear no molestation from me."

Nevertheless, Adelung is firmly convinced of the Asiatic origin of the peoples of Europe. At that time proofs were not considered necessary for this view. "Asia," says Adelung in the introduction to Part I. of the *Mithridates*, "has at all times been regarded as that portion of the world in which the human race had its origin, where it received its first education, and from the centre of which it poured forth its multitudes over the whole of the rest of the world," and in the introduction to the second part of this work, he says: "That portion of the globe which we, following the example of the Phœnicians, call Europe, is really but the western continuation of Asia. . . . . *Therefore*, it has this quarter of the globe to thank for its population, and especially Central Asia" (though Paradise, according to Adelung, *ib.*, i. p. 61, lay in Cashmere), "that great and ancient nursery of the human race for Asia, Europe, and America."

Adelung also had ideas about the order and direction in which the various peoples immigrated into Europe. *Cf. Oldest History of the Germans*, &c. (*Aelteste Geschichte der Deutschen*, &c., Leipzig, 1806, p. 121). He distinguishes in Europe, from east to west, six different races and languages, Iberians, Celts, Teutons, Thracians (more precisely the group formed by the Thracian, Pelasgic, Greek, and Latin languages), Finns, and Slavs, of which the Iberians, as dwelling farthest west, must have migrated first. Anyhow, the position of these races relatively to each other shows that their immigration followed two main lines of march: one, that of the Celts and Thracians (*cf.*, however, *Mithrid.*, ii. p. 340) to the south, the other that of the Teutons, Slavs, and Finns to the north of the Danube.

If we now inquire to what extent Adelung and his age had recognised the etymological kinship of the Indo-Germanic lan-

guages, we have first to mention that the important resemblances of Sanskrit to the other languages were, thanks especially to the writing of Fra Paulinus a S. Bartholomæo,* by no means unknown. Adelung has a chapter (*Mithrid.*, i. p. 149) entitled "Agreement of many words in Sanskrit with words of other ancient languages," which begins with the following sentence: "The great antiquity of this language is shown among other things by the agreement of so many of its words with words of other ancient languages, the only possible reason for which is that all these peoples at their origin, and before their separation, belonged to a common race." Here, however, there is no recognition of the idea of an Indo-Germanic family of nations, as is shown by the catalogues of words which follow, and in which Hebrew, Syrian, Turkish, and other words are brought in for comparison with Sanskrit.

As to the rest, in regard to the Indo-Germanic peoples, there were two cases of closer connection which were particularly asserted and maintained at that period: the first was the close relationship between Latin and Greek, the second that which was supposed to exist between Persian and German. On the latter point, especially since the year 1597, a very extensive literature† had been amassed, and even Leibnitz was of the opinion (*cf. Mithrid.*, i. p. 277) that the relation between German and Persian was so close that *Integri versus Persice scribi possent, quos Germanus intelligat.*

The explanation of relations of this kind was at that period sought exclusively in processes of mingling, which the peoples in question were supposed to have gone through in historic or prehistoric times. Thus Adelung and Vater (*Mithrid.*, ii. p. 157) explain Latin as a mixture of Celtic (*Aborigines*) and Greek (*Pelasgi*) elements, and the German constituents in Persian are brought into connection with the sojourn of the Goths on the Black Sea in the neighbourhood of Persia: "for, as they were a wild, restless, conquering race, ever seeking to expand at the cost of their neighbours, they cannot have spared Persia when in its neighbourhood" (*cf. Aelteste Geschichte d. Deutschen*, 1806, p. 550). Further, "Greek, to our astonishment, contains many Teutonic roots, perhaps one-fifth of its vocabulary, and yet we may not regard the one language as the mother of the other. Since the Teutons came from the east, they must have dwelt a long time in the north of Thrace, before they penetrated still further north, and as barbaric tribes cannot long behave as peaceful neighbours, they may have poured over the district south of them, and made themselves masters of it several times, and have left a part of their language behind them as a memento." Such was Adelung's opinion on this

* 1798. *Diss. de antiquitate et affinitate linguæ Zendicæ, Samscridamicæ et Germanicæ.* Padua.
1802. *Diss. de Latini sermonis origine et cum orientalibus linguis connexione.* Rome.

† Given in Adelung, *Aelteste Geschichte der Deutschen, &c.*, Leipzig, 1806, p. 360 *seq.* *Cf.* also Th. Benfey, *Geschichte der Sprachwissenschaft*, p. 228 *seq.*

subject in the *Oldest History of the Germans*, &c. (*Aelteste Geschichte der Deutschen*, &c., p. 352), which appeared a short time before Part I. of the *Mithridates*. It is, therefore, very remarkable that the same author, in those passages of the *Mithridates* in which he has to speak of the same subject, reaches another view of the matter, and one which comes very near the true state of the case. At any rate, in the *Mithridates*, i. p. 279, it strikes him as very surprising that the Teutonic elements in Persian look not like strangers, but "as though they were closely interwoven with the original structure of the language and its forms." For this reason, the following explanation seems to him to be far the most probable: "The Teutons, like all the peoples of the West, derive their descent from Asia, and if it is now impossible to determine the locality which they inhabited before their migrations, still there is no reason why it should not be placed in Central Asia close to the bounds of Persia and Thibet, a country whose unstable hordes have sometimes populated, and more than once shaken Europe. The Teuton, the Slav, the Thracian, the Celt, and so on, may thus have drawn *from one and the same linguistic source, and at the same time as the Persian, and only have become estranged by time, climate, and customs.*"

Thus, the learned German student of language had shortly before his death, independently as it seems, reached the same conclusion as that which the famous Englishman, Sir W. Jones, owing to his greater knowledge of Sanskrit, had pronounced * as early as the year 1786,—namely, that the points of agreement between this language and especially Greek and Latin, though also ancient German and Celtic (Persian and Slavonic are not mentioned by Jones in the passage in question), can only be explained on the assumption that *they are derived from a common source, now perhaps no longer in existence.*

It was reserved for the nineteenth century to produce proof in the scientific sense, of the unity of the Indo-Germanic † languages. Thanks to the immortal Franz Bopp, the circle of Indo-European languages begins to be drawn closer and tighter. Doubt is now no longer possible as to the common origin of the languages dealt with in Bopp's *Comparative Grammar* (1833–35): Sanskrit, Zend, Greek, Latin, Lithuanian, Old Slavonic, Gothic, and German, to which may be added, as dealt with in separate treatises, Celtic (1839), Old Prussian (1853), Albanian (1854–55), and in a second edition (1856–61), Armenian. But whereas with Bopp the assumption of a prehistoric unity of the Indo-Germanic peoples is but a background for the explanation of facts of language, on the foundation laid by him the idea gradually begins to be recognised as one of pre-eminent importance for history.

Nothing, however, was more closely connected with the explana-

* *Cf.* Th. Benfey, *Geschichte der Sprachwissenschaft*, p. 347.

† The expression Indo-Germanic seems to have been first used by Klaproth in his *Asia Polyglotta*, 2nd ed., 1831 (and also in the first edition, 1823 ?), and not as Spiegel (*Arische Periode*, vi.) thinks, by Pott for the first time.

tion of the relationship of the Indo-Germanic languages to each other than the question as to the starting-point, the original home of the Indo-Europeans. If one looked at a group of related words, such say, as Goth. *fadar*, Lat. *pater*, G. πατήρ, Sans. *pitâ*, Zend *pita*, there were *a priori* two possible ways of explaining their relation: either one of the forms enumerated must be regarded as the parent of the rest, or they are all derived from some one original form now no longer existing, and only recoverable by the comparison of languages. It was necessary to decide this question one way or the other before the position of the original Indo-Germanic home could be determined; and although Sir W. Jones had divined the truth, there were not wanting people to claim one or other of the Indo-European languages as the mother of the rest. The honour of this post was assigned either to Sanskrit, to which was principally due the discovery of an Indo-European family of languages, or to Zend, which had all the greater reputation for sanctity and antiquity, because little was known about it to inquirers at the beginning of the present century.

The derivation of the Indo-Germanic family from India was maintained by F. von Schlegel in his epoch-making work, *The Language and Wisdom of the Hindus* (*Sprache und Weisheit der Inder*, 1808, *cf.* vol. iii. ch. iii. p. 173). He explains the connection of the languages, mythology, and religion of the Indo-Germanic peoples in an historical manner, by means of colonies, which were sent forth in the remotest past from populous India to Asia and Europe, and were there fused with the original inhabitants of the land, on whom they stamped their language and customs. Individuals also, especially priests, thinks Schlegel, may occasionally have journeyed forth as missionaries, and spread their native tongue. On the other hand, the greater antiquity of Zend, as compared with Sanskrit, is asserted by H. F. Link in a work which also was of very great value for that period, *Antiquity and the Primeval World explained by Natural Science* (*Die Urwelt und das Alterthum, erläutert durch die Naturkunde*, 2 Pts., Berlin, 1821 and 1822). As, however, according to him, "the original Zend language," the mother of Sanskrit, from which sprang Greek, Latin, and Slavonic—German is still in his eyes the daughter of Persian, which again is the outcome of a remarkable mixture of Zend and barbaric (*i.e.*, Teutonic) elements—was spoken in Media and the neighbouring districts, he has no doubt that the original abode of the Indo-Europeans is to be looked for in the highlands of Armenia, Media, and Georgia, a view which at the beginning of this century generally prevailed amongst the most distinguished inquirers, Anquetil-Duperron, Herder, Heeren, and others. Here, too, as in Adelung's opinion also (*cf. Mithrid.*, i. p. 6), was the home of the domesticated animals and cultivated plants, and generally of all "the improvements in man's condition, which were transmitted to us" (*cf.* p. 243).

However, these purely hypothetical conjectures as to the original Indo-European home lost every shred of support the moment the

conviction spread that all the Indo-European languages, and therefore Sanskrit and Zend, stood in the relation of sisters to one another. India alone was for some time longer, and by A. Curzon last of all (*On the Original Extension of the Sanskrit Language over certain Portions of Asia and Europe, Journal of the Royal Asiatic Society*, xvi. p. 172, 1856), treated as the starting-point of the Indo-Europeans (*cf.* J. Muir, *Original Sanskrit Texts*, ii. 2, p. 301 *seq.*).

The first to try to obtain some firm ground for determining the position of the original Indo-Germanic home, without falling a victim to the erroneous idea that some one of the Indo-Germanic peoples was to be regarded as the parent of the rest, was J. G. Rhode in his book *The Sacred Stories of the Zend People* (*Die heilige Sage des Zendvolkes*, Frankfurt, 1820 (*cf.* F. Spiegel in *Ausland*, 1871, p. 55). He also first pointed to that portion of the interior of Asia which is still regarded by numerous scholars as the original home of the Indo-Europeans.

Rhode begins by endeavouring to discover the geographical starting-point of the Zend people, in which he comprehends Bactrians, Medes, and Persians; and with this view he employs the celebrated first Fargard of the Vendidâd, in which, as is known, sixteen districts occur as the creation of Ormuzd, and as many plagues as sent in opposition by Ahriman. Now, in the enumeration of the districts Rhode sees traces of the gradual expansion of the Zend people, whose starting-point he considers to be the *Airyana Vaêjanh*, first mentioned in that passage. As this *Airyana Vaêjanh* is followed next by *Sugdha*, which is undoubtedly the Greek Σογδιανή (O.P. *Suguda*, modern *Samarkand*), "*Eeriene* (*sic*) and *Sogdiana* must have bordered directly on each other, and it must have been possible for the nation to move directly from the first to the second. *Eeriene Vêedjo* (*sic*), therefore, is to be looked for nowhere else than on the mountains of Asia, whence, as far as history goes back, peoples have perpetually migrated; that is, on the cold and lofty plateaux and the summits of the mountains, covered with perpetual snow, at the sources of the Jaxartes and the Oxus" (p. 86). Now, as the evidence of language shows that Zend and Sanskrit are related to each other "as two sisters born of the same mother," once upon a time the Brahmins must have migrated from the elevated plateaux or the skirts of the mountains of Central Asia to the banks of the Ganges and the Indus (p. 96). Nay! Rhode believes that he has even found in the Avesta the cause of the original people's sudden departure from the original home. A sudden lowering of the previously warm temperature of Central Asia compelled them to abandon their cold mountain home for the warmer districts of Sogdiana, Bactria, Persia, &c.

In the same sense as Rhode, and about the same time, A. W. von Schlegel delivered himself in the Latin preface to a great work, which he designed, but never published, *Etymologicum nomen sive synopsis linguarum* (*cf. Indische Bibliothek*, i. p. 274). "*Quid igitur?*" he says on p. 291, "*num origines linguarum Pelasgi-*

carum et Germanicarum ab Indo et Gange repetere molimur? Minime quidem. Nullam harum ab altera derivatam dici posse censeo, sed omnes deductis in contraria rivulis ab eodem fonte fluxisse." And further, p. 293, "*Neque tamen Germanos indigenas cum Tacito crediderim, sed olim in Asia interiore, unde et Pelasgi sunt profecti, vicinas his sedes incoluisse.*" More precisely, A. W. v. Schlegel decides for the district between the Caspian Sea and the mountains of Central Asia, in a later paper, *De l'origine des Hindus* (*cf. Transactions of the Royal Society of Literature*, London, 1834, and *Essais Littéraires et Historiques*, Bonn, 1842).

An observation of the estimable Julius v. Klaproth deserves to be mentioned here, inasmuch as it is the first attempt to ascertain anything about the original home of the Indo-Europeans by means of Comparative Philology and the geography of plants. As early as the year 1830 (*cf. Nouveau Journal Asiat.*, v. p. 112) this scholar, from the fact that the name of the birch was the only name of a tree in Sanskrit which recurred in the other Indo-Germanic languages (Sans. *bhurja* = Russ. *bereza*, &c.), drew the conclusion that the Sanskrit population of India must have come from the north. "These peoples did not find in their new home the trees which they had known in the old, with the exception of the birch, which grows on the southern slopes of the Himalayas." Further, according to Klaproth (*Asia Polyglotta*, 1831, p. 42) the Indo-Europeans had descended into the plains partly from the Himalayas, partly from the Caucasus, perhaps even "before the Noachian flood."

Next, F. A. Pott delivered himself as to the geographical and ethnological area of the Indo-Europeans, both in the prefaces to his *Etymological Researches* (*Etymologischen Forschungen*, 1833 and 1836) and in his later treatise *Indo-Germanic Family of Languages* (*Indogermanischer Sprachstamm*, in the *Allg. Encyclop.*, v. Ersch u. Grüber, 1840, ii. pp. 1–112). Indubitably, in Pott's opinion (*Encyc.*, p. 19), the cradle of the Indo-Germanic family was in Asia, for "*ex oriente lux*, and the course of civilisation has always, on the whole, followed the sun. The people of Europe once lay on the breast of Asia, and like children played around her, their mother; for this we now no longer need to rely on confused and almost forgotten memories, we have actual and historical proof before us in the languages of Europe and Asia. There or nowhere must we look for the playground, the gymnasium in which man first developed the powers of his body and his mind" (*Etym. Forsch.*, i. p. xxi). In Asia, he decides for the district on the Oxus and Jaxartes, from the northern slopes of the Himalaya to the Caspian Sea. Here we may most safely imagine the parting-place to have been, from which the two main streams of the Indo-Germanic peoples seem to have moved in divergent directions (*Encyc.*, p. 19).

While Pott then maintained the Central Asiatic origin of the Indo-Europeans on the strength of general considerations, much the same as those to which Adelung had already given utterance.

Ch. Lassen endeavoured in his *Indian Antiquity* (*Indische Alterthumskunde*, 1847, i. pp. 511–31) to support Rhode's view by new combinations. The way, indeed, in which India is distributed between the different peoples that inhabit it, is held to indicate that the "Aryans," whose complexion distinguishes them from the original inhabitants, must have come into the land from the north-west.* In this case, however, their journey from the land of the Oxus must have led them through the western passes of the Hindu-Kush, through Cabul to the Punjaub. That, further, the *Airyana Taêjuh* of the Avesta was really situated where Rhode thought, in the north of Sogdiana, on the cold highland of the western slopes of Belurtag† and Mustag, and that it is here we must look for the original country, not only of the ancient Persians, but of the whole Indo-Germanic family (*cf. Altertumsk.*, i. p. 527), is further shown, Lassen thinks, by the fact that the Tadschiks, who speak Persian, the old original inhabitants of Khasgar, Jarkand, Khoten, Aksu, &c., dwell on both sides of that lofty mountain, and spread thence over Central Asia. And to these peoples Klaproth in his *Asia Polyglotta*, p. 243, and Ritter, by whom the hypothesis of the Central Asiatic origin of the Indo-Europeans was introduced into geography, (*cf. Erdkunde*, ii. p. 435, *f.*), had explicitly alluded as belonging to the Persian division of the Indo-Germanic family. Moreover, in several tribes, the *Yueti*, *Yuetshi*, *Yeta*, the *Szu*, *Se*, *Sai*, and especially in the blue-eyed, fair-haired *Usun* (*cf.* Ritter, *Erdkunde*, ii. and vii., in the passages given in the Index under *Usun* and *Yueti*), which were first referred to by Abel Remusat on the strength of Chinese authorities, and which appear about the second century before Christ as coming from the East, and as in hostile relations with the northern kingdoms of Persia, the last waves of the Central Asiatic Indo-Europeans were seen; nay! people did not

* In the year 1850, A. Weber (*Indische Stud.*, i. p. 161) thought he had discovered a fresh argument—it was subsequently adopted by Lassen (*cf. Indische Alterthumskunde*, I. 2, p. 638) and others—to show that the Hindus came from the land beyond the Himalayas. He points, to begin with, to the ancient story of the flood in the *Satapathabrâhmana*, i. 8, 1. 1, in which it is narrated how a fish advised Manu to build a boat because the flood would come. "When the flood rose, he (Manu) went on board. The fish swam up, and to its horn he fastened the boat's rope, and so he crossed this *northern mountain*" (the Himálaya). Manu descends thence into India and begets children. On the other hand, see Zimmer, *Altindisches Leben*, 1879, p. 101.

† With regard to the frequently recurring name "Belurtag," Bolortag, &c., a reference to H. A. Daniel, *Handbuch der Geographie*, 1880, p. 231, will set the matter right. He says: "From the elevated plateau of Pamir, the roof of the world, as the name signifies, Turan stretches west and north-west. Where the older maps mark a mountain-range running north and south under the name of Belurtag or Bolortag,—an error, since there is neither a mountain-range nor do the names occur there,—a waste plateau, about 400 Kilom. wide, separates that portion of Central Asia which is subject to the Chinese Empire from the Aralo-Caspian depression, and connects the mountain-systems of the Himalaya, Mustagh, Hindu-Kush in the south with the Alai-Tagh and Thian-Schan in the north." *Cf.*, however, Max Müller, *India: what can it teach us?* p. 267, note: "The Bolor, the very existence of which has been denied, has lately been re-established as the real name of a real mountain by Robert Shaw. He found that the name was applied by the Kirghis to the district of Kitral."

hesitate to identify, as did Klaproth and Ritter, the *Yeta* with the *Getæ*, the *Se* with the *Sacæ*, the *Usun* with the *Suiones*, their leaders *Kwenmi* with the Teut. *kuning* (*Erdkunde*, ii. p. 432), and so on. J. Grimm, too, in his *Geschichte der Deutschen Sprache*, contributed considerably to the spread of these ideas, by identifying the *Getæ* with the *Goths*. In the south-west of Persia, taken in its broadest signification, we have, however, according to Lassen, to place the original home of the second great linguistic family of the Caucasian race, the *Semites*. For the Hebrew story of Eden points in this direction, and what the Behurtag was for the Aryans, Ararat was for the Semites. A common place of origin, and pre-historic contact between the Semites and the Indo-Europeans is supposed to be proved by a resemblance between their languages which goes beyond "grammatical structure."

Thus, indeed, everything seemed to confirm the opinion that the Indo-Germanic peoples and languages had their roots in Asia, and J. Grimm was right in maintaining in his *History of the German Language* (*Geschichte der Deutschen Sprache*, 1848) that this view had but few opponents. "All the peoples of Europe," he says, p. 162, *f.*, "came from Asia in the distant past; an irresistible impulse, the causes of which are hidden from us, set in from the east to the west. The further west we find a people penetrating, the earlier it must have begun its travels, and the deeper the traces it may have left behind it on the way." The trifling and ill-founded opposition offered to this opinion of the first authorities on the subject (*cf.* Th. Poesche, *Die Arier*, 1878, p. 60) soon ceased entirely.

If Comparative Philology at its first appearance thus raised questions of the very greatest importance in history and ethnology, which now seemed to be approaching a final solution, the further growth of the science was destined to be of importance for another branch of human knowledge, which was in urgent need of assistance, the history of primitive culture.

As early as the year 1820, in a quarter apparently far removed from the new comparative method, that is, in the Malay and Polynesian languages, J. Crawfurd had in his comprehensive work the *History of the Indian Archipelago*, appended a tolerably extensive vocabulary to a general dissertation on the Polynesian languages, in which he endeavoured to trace the relationship of the most important terms of civilisation in this group of languages. Indeed, on the strength of his linguistic observations, he had even drawn a detailed description of the oldest civilisation of these peoples.*

* *Cf.* ii. p. 85: "They had made some advances in agriculture, understood the use of iron, had workers in this metal and in gold, out of which they probably made ornaments; they were clothed in material woven from the fibrous bark of plants, which they wove on a loom, but did not yet know how to make cotton garments, which knowledge they only obtained later from the Indian mainland; they had domesticated the cow and the buffalo, and used them as beasts of draught and burden, as also the pig, the fowl, and the duck, which served them as food."

Similar attempts were not wanting in the domain of the Indo-Germanic languages. The first step towards arranging Indo-Germanic equations for purposes of the history of culture was taken by the learned and acute R. K. Rask, in a prize essay which appeared at Copenhagen in 1818 (*Undersögelse om det gamle Nordiske eller Islandske Sprogs Oprindelse*, translated into German by J. S. Vater in the *Vergleichungstafeln der Europäischen Stammsprachen*, &c., Halle, 1882, see pp. 109–32), which contains indeed only etymologies confined to the European languages, but they are distinguished by what is relatively a very considerable degree of accuracy.*

Two short papers bearing on linguistic palæontology were A. W. v. Schlegel's *Names of Animals and Metals* (*Über Tiernamen und Namen der Metalle, Indische Bibliothek*, i. pp. 238–45), which were intended to illumine important chapters in the history of culture for the first time with the light of the science of language. In both papers Schlegel discusses the transference of certain names of animals and metals to other species of animals and metals, as, for instance the relation of the Greek ἔλεφας : Goth. *ulbandus*, "camel," a word which he regards as "an ancient memory of Asia;" of Goth. *wulps* : Lat. *vulpes* ; of Sans. *áyas*, Teut. *eisen*, Lat. *aes*, "copper," &c. Some of the etymologies, such as Lat. *ursus*, "bear" = O.H.G. *ero*, "horse," G. κάμηλος = Lat. *caballus*, &c., throw a lurid light on the condition of Comparative Philology at that time. A universal collection of the names of animals Schlegel intended to give in his *Synopsis linguarum* (*cf.* above).

Equally extensive was the use made of linguistic arguments by H. J. Link in his work mentioned above, in the sections on the spread of mankind, language as an indication of its spread, the home of the domesticated animals and the cultivated plants, the discovery of metals, &c.

A further step forward was taken by E. G. Eichhoff in his work *Parallèle des langues de l'Europe et de l'Inde*, 1836 (translated into German by Kaltschmidt, 2nd ed., Leipzig, 1845; *cf.* A. Höfer, *Berliner Jahrb. f. wiss. Kritik*, Dec. 1836, Nos. 104–10, and F. Pott, *Hallische Jahrb. f. deutsche Wissenschaft und Kunst*, 1838, Nos. 310–12). "Philology and history," he says in the Preface, "go hand in hand, affording each other mutual assistance, for the life of nations discloses itself in their language, which is the true mirror of their vicissitudes; and where the national chronology loses count, and the thread of tradition breaks, the pedigree of words, which survives the fall of kingdoms, begins to throw its light on the cradle of the race." With this view, he groups, as indeed Rask had done before him, his comparisons of words according to their importance for the history of culture, assigning them to eight groups—the moon and the elements, plants and

* Similar comparative catalogues were besides framed by N. Th. Colebrooke, the founder of Hindu philology, though not published (*cf.* Max Müller, *Essays*, iv. p. 466, *f.*).

animals, the body and members, the family and society, town and dwellings, arts and furniture, trades and occupations, qualities and attributes. In this way he hopes to show how "this rich and tenacious civilisation propagated itself in a thousand different degrees, but always in similar stocks and in regular ramifications from the banks of the Ganges, the ancient mysterious house, over the enormous area that civilisation now covers and whose borders are daily extending" (p. 145).

But however meritorious may be the fundamental idea of Eichhoff's collections of words, the collections themselves are almost absolutely worthless, as they rest exclusively on superficial similarities in the words compared, and are but rarely and then accidentally correct. Again, the exaggerated estimate of the antiquity of Sanskrit, which leads him to place the home of the original people in India, contributes to give the work a false direction. A *truly scientific* etymology, that is, a comparison of words on the strength of fixed phonetic laws derived from the observation of the sounds of speech, was first laid down in the *Etymological Researches (Etymologische Forschungen)* of F. A. Pott (1833 and 1836), which obviously had no influence on Eichhoff, and which was followed in 1839-42 by Th. Benfey's *Lexicon of Greek Roots (Griechisches Wurzellexicon)*. Now for the first time was linguistic material of a relatively reliable character placed at the disposal of the historian of culture.

A. Kuhn, therefore, had firmer ground under his feet when, in the year 1845, he made a fresh attempt, in his epoch-making paper *On the History of the Indo-Germanic Peoples in the most Ancient Times (Zur ältesten Geschichte der Indogermanischen Völker, Easter Programme of the Berlin Real-Gymnasium)*, to employ Comparative Philology to illumine the primitive Indo-Germanic period. The starting-point in Kuhn's discussion, which "does not pretend to be anything more than an attempt," is the question "whether it is not possible by means of this very Comparative Philology to proceed from the conclusion that all these great nations are related to each other, to a further conclusion, that is to establish the main outlines of the condition of the primitive people in the period antecedent to their dispersion" (p. 2). Here we have the conception of a linguistic Palæontology clearly expressed.

To begin with, Kuhn puts together the names for tolerably distant degrees of kinship, such as for brother-in-law and father-in-law, which coincide in the Indo-Germanic languages, in order thus to demonstrate the existence in the primeval period of a regular family life, the kernel and basis of a State. For, according to Kuhn, the original people, when it left its original home, had already reached a stage in the evolution of the State beyond the patriarchal form of society (p. 7). This, he thinks, is shewn by comparisons such as Sans. *rājan*, Lat. *rex*, Goth. *reiks*; Sans. *pâti*, G. *πόσις*, Goth. *faths*. (Sans. *viçpâti* = Lith. *wiëszpats*), &c. Further, he finds the pastoral life of the oldest Indo-Europeans amply demonstrated by the uniform terms for most of the domesti-

cated animals. Thus he reaches the conclusion "that the cattle and poultry possessed by our original ancestors were in the main those we have to-day" (p. 12). The domestication of the cat alone he refuses to the primitive world, since its names show no such agreement as point to an original connection between them; on the other hand, he considers it possible that our cocks and hens were known, in spite of the fact that they have different names amongst almost all Indo-Germanic peoples, because of the great sanctity of the bird among Hindus, Romans, and Germans (p. 10). The Indo-Europeans, however, according to Kuhn, were not merely pastoral, they had already made the transition to Agriculture. Comparative Philology can, indeed, only make it probable that the Indo-Europeans before their dispersion were acquainted with the plough and agriculture, for the root employed in the European languages to designate the plough—*ar* (G. ἀρόω, Lat. *arare*, &c.)—can only be traced in Sanskrit in this sense hypothetically (p. 12); for instance, according to Kuhn in *ârya*, "ploughman" (?); while the European word for plough, G. ἄροτρον, Lat. *aratrum*, &c., which Kuhn places immediately by the side of the Sans. *ârtra*, in that language only means "oar." On the other hand, language decisively proves that grain must have been known and employed for making bread before the various peoples separated (p. 14). The general name for grain in the primitive period was *yava* (Sans. *yâvas*, G. ζειά, Lith. *jawai*). With regard to the individual varieties, Kuhn finds that expressions for different varieties of grain agree in all languages compared, and therefore grain must have been known to the original people; "on the other hand, it is impossible to decide whether we are to understand thereby the varieties subsequently designated by those names; barley and wheat, as it seems, claim the highest antiquity, and the former pre-eminently takes precedence, as it especially was used in offerings by the Greeks, Romans, and Hindus" (p. 16). Thus the pursuit of agriculture makes it probable *a priori* that the original people had fixed abodes, and this is further expressly proved, Kuhn thinks, by an abundant array of common words for house and yard, dwelling, village, town, &c.—"The ancestors of the Indo-European peoples, then, were already a settled people" (p. 18).

Thus was an attempt made for the first time to draw a picture of the culture of prehistoric Indo-Germanic times on the basis of Comparative Philology; but Kuhn's treatise does not seem to have become fertile in wider circles, until in the year 1850 the author expanded it with copious additions, especially in the domain of the Celtic and Slavonic languages, and allowed it to be published once more. In the meantime, interest in the union of linguistic and historic research had been greatly quickened by the veteran comparative philologist, Jacob Grimm, who wrote his work the *History of German (Geschichte der deutschen Sprache)*, which appeared in 1848, from a point of view, described by himself as follows (Preface, p. xiii): "In linguistic research, of which I am an adherent, and on which I take my stand, I have never been content to remain

satisfied with words without proceeding to things. My object has been not merely to build houses, but also to dwell in them. It seemed to me worth while to try whether our national history could not be assisted in shaking her bed by language, and whether, as etymology often benefits by the suggestions of those who have no special knowledge of it, history also could not derive some profit from the unprejudiced point of view of language."

For us the most important points in Grimm's work are the first seven sections: Age and Language, Shepherds and Farmers, Cattle, Hawking, Farming, Feasts and Months, Faith, Law, Customs—"by means of which many varied features from the inexhaustible stores of antiquity will be put in as a foreground for all that is to follow" (p. 161). Grimm's object was not to give a clear and precise picture of the original Indo-Germanic period, as Kuhn had tried to do; he wishes to put together all the common points which bind the peoples and languages of Europe to each other and to those of Asia. The marvellous wealth of his historical and linguistic knowledge is to reveal prehistoric Teutonic times to him, and in order to detect its phases he traces its affinities with equal interest, whether they lead him far or near. In this way, however, questions force themselves on his notice, about the more or less close relationship of the Indo-Germanic languages to each other, which could not but be of importance for the further development of linguistic and historical studies. He himself pronounces on this point, p. 1030, as follows: "As the result of all my research I find that our German language is most closely connected with Slavonic and Lithuanian, somewhat more remotely with Greek and Latin, though in such a way that it agrees with each of them in some of its tendencies." The work does not go so far as to draw sharp distinctions, as was subsequently done, between definite periods of civilisation; on the contrary, it is often difficult to follow Grimm's historical inferences from partial agreements of languages. We may refer to the discussions on the Names of Metals, pp. 9–14, and on Farming Terms, pp. 68–69, &c.

On the whole, Grimm is of the opinion that the Indo-Europeans, when they moved from Asia to Europe—ch. viii. is devoted to their migration—were still shepherds and warriors. "This irresistible march of the nations from Asia into Europe," he says on p. 15, "pre-supposes bold bands, eager for the fray, allowing themselves but occasional rest and quietness, living, under the pressure of advance, on their herds, on the products of the chase, on the spoils of battle. Before devoting themselves to quiet farming, they must have been hunters, shepherds, warriors. . . . The migrating shepherds had still much in common, for which the later farmers had to find special words" (p. 69). "Nevertheless, there remain," he adds, under the influence of Kuhn's work, "as important exceptions, *yáva*, *jawar*, *ζεά*; *kōka* (Sans. 'wolf,' *cf.* *vṛka* 'wolf and plough'), *hōha* (Goth. 'plough'), *huoho* (*cf.* Kuhn, *ib.*, pp. 13–15); as also, if the remarkable analogy is competent to over-

come all doubt, *aritra*, *aratrum*, ἄροτρον; *plavá* (Sans. 'vessel'), πλοῖον, *plúgas* (Lith. 'plough')."

Thus, by the labours of Kuhn and Grimm, the foundation of a methodical investigation of Indo-Germanic antiquities by means of Comparative Philology was laid for the first time. When, it was said, a word recurs in all languages of the Indo-European family with the same form and the same meaning (more or less of course), this word must have existed in the original Indo-Germanic language, and consequently the conception designated by it must have been present in the primitive period. Because the Sans. *çván* corresponds to the Greek κύων, Lat. *canis*, &c., therefore, it was inferred, the Indo-Europeans before their dispersion must have possessed the dog as a domesticated animal; and because Sans. *puri*, "town," can be parallelled by G. πόλις, they must have lived in towns while they yet formed one people (*cf.* Kuhn, *ib.*, pp. 9 and 17).

But whereas it is the reconstruction of the primitive Indo-European period itself that Kuhn always keeps in view, Grimm starts from the special point of view of ancient German, and follows the track of its affinities, even if it does not lead him beyond the limits of the European languages. This results in his constructing transitional periods of culture, not indeed sharply marked off from one another, intermediate between the time known to the history of each separate people and the period immediately antecedent to the dispersion of the Indo-Europeans. This idea was the more readily entertained because the purely grammatical side of Comparative Philology, relying on linguistic arguments, had already reached the conclusion that the Indo-Germanic peoples could not have torn themselves from the bosom of the original home all at once.

Bopp indeed had expressed the view, in the first edition of his grammar, that in Asia Sanskrit and Medo-Persian were united closely to each other, and in Europe, on the one hand, Greek and Latin, on the other Lithuanian, Slavonic, and Teutonic.

Grimm's view on this subject we have already seen. Kaspar Zeuss also, in 1837, expressed himself very decidedly in his work *The Germans and Neighbouring Peoples* (*Die Deutschen und die Nachbarstämme*), in favour of the closer connection of German and Slavonic, and endeavoured to strengthen the view by a series of linguistic proofs (*ib.*, pp. 18–20).

A new hypothesis, to which in 1853 even Bopp gave in his adhesion (*Ueber die Sprache der Alten Preussen Abh. d. Berl. Ak. d. W.*), was put forward in 1850 by A. Kuhn, in the reprint of his paper, *On the History of the Indo-G. Peoples* (*Ueber die älteste Geschichte der Indog. Völker*, p. 324), already mentioned; from a series of arguments drawn from the science of language and the history of culture, he infers "that the Slavonic language remained longer in contact with Sanskrit, or more probably with Zend and Persian, than with the other Indo-Germanic languages"—though Bopp dissents from Kuhn so far as to place the differentiation of the

Letto-Slavonic branch *before* the division of the Asiatic section into Sanskrit and Persian.

At the same time the wildest views were rife as to the grouping of the Indo-Germanic peoples. Even in 1853, H. Leo, for instance (J. W. Wolf's *Zeitschrift f. deutsche Mythologie und Sittenkunde*, i. p. 51), ventured to maintain that the Teutons separated from the Hindus later than did the Persians, and that this separation actually did not take place until after the Hindus had settled in India (*cf.* A. Weber, *Z. d. M. G.*, viii. p. 389).

Having thus given a connected account of the beginning of linguistic Palæontology up to this date (about the year 1850), we shall do well to follow the various tendencies which we have come across in our review separately, and treat the further development of this branch of science in separate sections; and following an order which will easily be understood, we shall treat of—

The Reconstruction of the Primitive Indo-European Period by means of Language (ch. ii.),

The Partings of the Peoples and their Importance for the History of Culture (ch. iii.),

The Attempts to ascertain the Original Home of the Indo-Europeans (ch. iv.).

The few investigations in the domains of the Ural-Altaic and Semitic languages which belong to the subject will be mentioned at the end of chapter ii. Works exclusively mythological in their content are as a rule excluded from this historical investigation, because they have but little connection with "linguistic" Palæontology in the proper sense. We shall, however, subsequently (Part 4, ch. xiii.), have an opportunity of briefly doing justice to the historical development of Comparative Mythology.

It was to be expected that Comparative Law also, which from 1878 had at its own disposal a periodical devoted to its study, would gradually possess itself of the conception of the pro-ethnic unity of the Indo-Germanic peoples, with a view to establishing the Primitive Law of the Indo-Europeans by a comparison of the legal institutions of the individual peoples. This attempt was first stated in a clear and connected manner in a paper by F. Bernhöft (*Ueber die Grundlagen der Rechtsentwicklung bei den Indog. Vorlkern*, *Zeitschrift*, ii. 253, *ff.*). This side, too, of Aryan antiquities we shall abstain from discussing, at any rate in this section of our enquiry, and shall wait for Part IV. before returning to the works on this subject.

CHAPTER II.

THE RECONSTRUCTION OF THE PRIMITIVE INDO-GERMANIC PERIOD BY MEANS OF LANGUAGE.

It was by Th. Mommsen's *History of Rome* (1854) that the door of history was thrown open to Kuhn's idea of reconstructing the prehistoric era of the Indo-Germanic peoples by means of Comparative Philology. The celebrated historian, who sees in history nothing but "the development of civilisation," seized eagerly and confidently on the possibility of tracing the beginnings of Italian culture to a Greco-Italian or Indo-Germanic period. In his material results Mommsen agrees in the main with his predecessors. The development of pastoral life in the primitive period he regards as demonstrated "by the unalterably fixed names of the domestic animals" (*bos, pecus, taurus, ovis, equus, anser, anas*; 1st German ed., p. 13; Eng. trans., pop. ed., i. p. 15); the use of the waggon by *iugum, axis*; acquaintance with metals by *aes, argentum, ensis*; with salt by *sal*; the construction of huts by *domus, vicus*, &c. On the other hand, he is distinguished from Kuhn by his assumption that cereals were not yet cultivated by the Indo-Europeans. A few remarks are devoted in the later editions (the 8th and last, 1888) to proving this view; and it appears from them that Mommsen sees, in the equation G. ζειά = Sans. *yáva*, a proof that "at the most, before the separation of the peoples, they gathered and ate the grains of barley and spelt growing wild in Mesopotamia,* not that they already cultivated grain" (7th ed. p. 16; 2nd, p. 16; English trans., pop. ed., p. 16). Mommsen concludes his account of the condition of the Indo-Europeans by holding out a brilliant prospect for research by means of linguistic Palæontology.

The first thing needful was a copious and careful collection of linguistic material for the history of culture.

A convenient storehouse was offered by the *Journal for the Comparative Philology of German, Greek, and Latin* (*Zeitschrift für vergleichende Sprachforschung auf dem Gebiete des Deutschen, Griechischen, und Lateinischen*), which was edited by A. Kuhn, and

* This, according to Mommsen, was the most ancient home of the Indo-Europeans (cf. 3rd ed., p. 31; 7th, p. 30). The same opinion had previously been maintained by Vaans Kennedy in his *Researches into the Origin and Affinity of the Principal Languages of Asia and Europe*, 1828.

first appeared in 1851. The mere name of the editor warranted the hope that the direction towards the investigation of history, first imparted by him to Comparative Philology, would be followed. And he himself did, in the 4th volume (1855), return to our subject in a special paper, *Comparative Philology and the Primeval History of the Indo-Europeans* (*Die Sprachvergleichung und die Urgeschichte der Indog. Völker*, art. i.). This work has a special interest because of its introductory remarks on method, through which the attempt plainly makes itself felt to obtain stricter laws than heretofore for establishing historical facts by means of linguistic arguments. Here, for the first time, attention was called, although only in a distant manner, to the difficulties which, as will come out more and more clearly in the course of our investigation, stand in the way of reconstructing the original period by purely linguistic arguments. Things are relatively simple, such is the train of ideas in the author's mind, when the term for a concept is identical, as regards both root and *suffix*, in all Indo-Germanic languages, or at least in those which "have been transmitted to us in a long series of literary monuments;" but it is only hypothetically possible to prove the identity of formative syllables, or to establish the existence of a given form of suffix, in the original period.

Further, it is not the commonest of occurrences for a word to be found in all or even the most important of the related languages. On the one hand, this is perfectly intelligible: "on their marches through wild mountain glens, desolate steppes and fertile land, in their intercourse with other peoples, barbarous or civilised, their circle of ideas expanded or contracted, according to the difference in their circumstances, just as changes in the mode of life brought about the loss of many manners and customs." It is therefore by no means remarkable that Greeks, Romans, and Germans should share names of plants and animals that are wanting among the Hindus, who found themselves confronted in their new home with such a change of nature. On the other hand, these very causes are the reason why it is often impossible to make the existence of a given concept in the primeval period more than probable to a certain degree. Again, the frequent difference in meaning of words phonetically identical makes historical conclusions uncertain. We may take as an example G. φηγός "oak" = Lat. *fagus* "beech," O.H.G. *puohha*. Did the word mean "oak" or "beech" in the primeval period? The only thing which can be ascertained by means of etymology is that a tree with edible fruit (φηγὸς· φαγεῖν) was to be found in the original home. Indeed, occasionally etymology leaves the investigator entirely stranded, as in the case of Sans. *dru* "wood, twig, tree," Goth. *triu* "tree," G. δρῦς "oak," so that the only result to be got at is that "our Indo-European ancestors dwelt in a region which was not a treeless waste."

When A. Kuhn had thus to a certain extent made the questions as to the civilisation of the primeval Indo-Germanic period the order of the day in Comparative Philology, and when new affinities and connections were being discovered almost every day in the vocabu-

lary of the Indo-Germanic languages, it was to be expected that the idea should occur of employing the whole of the material bearing on the subject for the composition of a general picture of Indo-Germanic civilisation. This task was undertaken in the most ample and thoroughgoing, but unfortunately most uncritical, way by the Genevan *savant* Adolphe Pictet, who had already shown his interest in historico-linguistic studies in some shorter dissertations—*Etymologische Forschungen über die älteste Arzneikunst bei den Indogermanen* (*Etymological Investigations into the most Ancient Form of Medicine amongst the Indo-Europeans*), *K. Z.*, v. pp. 24–29, and *Die alten Krankheitsnamen bei den Indogermanen* (*Ancient Names of Diseases amongst the Indo-Europeans*), *K. Z.*, v. pp. 321–54, &c. His work, *Les origines Indo-Européennes ou les Aryas Primitifs, essai de paléontologie linguistique* (a term which had not been used before), Paris, 1859–63 (2nd ed., Paris, 1877, *cf.* on this point ch. iv. below), endeavoured in two large volumes to examine the whole vocabulary of the Indo-Germanic languages, with a view to reconstructing the primeval Indo-European period. It consists of five books, of which the first contains geographical and ethnological discussions; the second deals with the natural history (minerals, plants, animals) of the primitive Indo-Germanic period (vol. i., 1859); the third discusses the material civilisation of the ancient Indo-Europeans; the fourth, their social relations; and the fifth and last, the intellectual, moral, and religious life of the primeval period (vol. ii., 1863).

Now this arrangement of the subject-matter was a mistake. The author, for reasons which we shall examine more closely in our fourth chapter, having decided in favour of the ancient Bactria as the original home of the Indo-Germanic family, makes this geographical hypothesis the basis of his further reconstruction of the primeval period. Whatever seems to him to correspond to the geography or natural history of this portion of the world, he refers without hesitation to the primeval period, even if the linguistic proofs, on which this *paléontologie linguistique* is based, note, should be altogether wanting. This holds good especially of what he says about the animal kingdom and the vegetable world. Thus he says of the camel (i. p. 382): "Although the camel is not a European animal, and its name, *camelus*, is undoubtedly borrowed from the Semitic, it is nevertheless very probable that the Indo-Europeans were acquainted with it, as the two-humped camel is native to Bactria." By a similar mode of argument, the tiger (i. p. 425) is assigned to the primitive Indo-Germanic period.

It obviously cannot be my task to examine this extensive work in detail. I shall rather content myself with a short account of Pictet's method, which can be better seen by the selection of an example than from the section (§ 2, i. pp. 11–25) which he devotes to stating it. This will be the best way of judging the results which the author reaches (*cf.* the last chapter, *Résumé général et conclusions*). Such a treatment of Pictet's method is necessary

even now, as the importance of the author is still much overrated—not indeed by specialists, but in wider circles (*cf.*, *e.g.*, B. Kick, *Einleitung in die slav. Litteraturgesch.*, pp. 52, 65, &c.).

As the fundamental principle of Pictet's researches is: "*Partir toujours du mot sanscrit, s'il existe, soit pour arriver à la restitution du thème primitif, soit pour en découvrir l'etymologie probable* (i. p. 23), in order to show that the Indo-Europeans were, as Pictet is convinced that they were, acquainted with agriculture, it is above all things necessary to discover in Sanskrit the European names of the cereals. But whereas the best Sanskrit scholar of that time, Ch. Lassen, had as early as the year 1847 come to the conclusion that "*Yâva* may be regarded as the oldest variety of grain cultivated by the Indo-Europeans, because this is the *only* grain whose name has been preserved in all the related languages" (*Ind. Alterthumskunde*, i. p. 247), Pictet promises, as the result of his comparisons, "that the ancient Indo-Europeans already possessed most of the cultivated plants which to this day form the basis of our agriculture." In this connection he relies, for wheat and barley, on the following designations, which apparently coincide in Sanskrit and the European languages:—I. Wheat (1) G. *σῖτος* = Sanss. *sitagimbika*, *sitaçûka* or *sitya*, p. 262; (2) Goth. *hwaiteis* = Sanss. *çvêtaçunga*, p. 263; (3) Ir. *maan* = Sanss. *sumana*, p. 264; (4) Ir. *arbha*, Lat. *robus* = Sanss. *arbha* (?), p. 265; (5) *πυρός* = Sanss. *pûra*, p. 266; (6) Russ. *pšenica* = Sanss. *psâna*, p. 266. II. Barley: (1) G. ζειά = Sanss. *yâva*, p. 267; (2) Lith. *miẽżei* = Sanss. *mêdhya*, p. 268; (3) O.H.G. *gersta* = Sanss. *grasṭâ*; (4) G. *κριθή* = Sanss. **çri-dhâ*; (5) *κοττή* (Hesych.) = Sanss. *ças-tâ*; (6) Lat. *hordeum* = Sanss. *hṛdya*; (7) Cymr. *haidd* = Sanss. *sâdhâ*, pp. 269–71.

Of these equations, the phonetic difficulties and impossibilities of which we pass over, we must, to begin with, exclude as absolutely meaningless for the reconstruction of the primeval period those which never have in Sanskrit stood for any kind of grain, such as *pûra* (*πυρός*): root, *par*, "a kind of cake;" *psâna* (*pšenica*): root, *psâ*, "eating" (only to be traced in *Hemacandra's Dictionary*, 12th century A.D.); *grasṭa* (*gerste*): root, *gras*, "that which has been eaten;" *çasṭâ*: root, *çaṁs*, "laudatus;" *hṛdya* (*hordeum*), "dear to the heart, lovely;" *sâdhâ* (Cymr. *haidd*), "leading straight to the end." Equally idle is the reference of words apparently isolated to original forms, in the manufacture of which the author has attained to a marvellous perfection. Especial use is made of compounds. In the same way that, according to him, *κριθή* "the wealth-giving" = **çri-dhâ*, he refers a word like *hund* to **kvan-dhâ*, *papaver* to **pâpa-vara*, *χελιδών* to **hari-dâna*, &c. The numerous compounds of the primeval age, with the pronominal syllable *ka* as their first element, which seems to have meant "what!", are quite comic. "What food!" (quel aliment!); "**ka-bhara*," ejaculated the ancient Indo-Europeans when they gave oats a name (O.H.G. *habaro*); "what nourishment!" (quelle nourriture!); "**ka-rasa*," when they named millet (O.H.G. *hirsi*). These primeval compounds are supposed to have had

[illegible]rate languages. Sometimes it was only the
various fates in the sepa[illegible] = *sita-ambika*), sometimes only the second
first element (G. *zires*[illegible]*ea*) that was preserved. The remarkable
(Ir. *mann* = Sanz. *su-m*[illegible]ning of these words, which was peculiar
thing is, that the me[illegible] (*sita-ambika*, literally, "with white ears,"
only to the compound [illegible] charming, pretty" = wheat) should never
su-mana "well-minded, [illegible] the separate halves.
theless have survived i[illegible]e Sanskrit words in this collection which

We now turn to thos[illegible]mes of kinds of grain in Sanskrit litera-
do really occur as the r[illegible] *yeṭaṇiga, sumana, mādhya*. Here, how-
ture: *sitaṇibika, sitak*[illegible] with the defect in Pietet's method, which
ever, we are confronted[illegible] questionable almost from the first page to
makes his conclusions q[illegible] utter disregard of the historical develop-
the last. This is, the [illegible] Sanskrit, and especially in the meanings of
ment which took place i[illegible]rd is old or modern, whether its actual
words. "Whether a w[illegible] and guaranteed, further, whether its
existence is ascertained[illegible] only, in the course of the three thousand
meaning is original or wa[illegible]skrit literature flourished, developed by
years through which San[illegible], symbolism, or even of mythology, or
some process of metapho[illegible]he invention of some scholiast for the
whether it is nothing but[illegible]ll these are things about which M. Pietet
purposes of explanation—[illegible] (*A. Weber*). Thus, none of the names
does not bother himself" [illegible]a and barley occur as such in the
which he quotes for whe[illegible]hey can only be found even in late
language of the Vedas; [illegible]h as that of *Hemacandra* (12th century
literature in dictionaries su[illegible]*ruma* (not composed until the present
A.D.), in the *Çabdakalpad*[illegible]*sha*. But even if one or other of these
century), and the *Amarako*[illegible]ed in the mouth of the people as the
words should have been [illegible]ain, this signification is so clearly a
name of a variety of gr[illegible]*mādhya*): (*a*) sappy, strong, fresh, un-
secondary meaning (*cf., e.g.*, [illegible] in sacrifice, pure, &c.; (2) amongst
injured; (*b*) fit for offering[illegible]e *Çabdakalpadruma*), that the idea of
other meanings, barley (in t[illegible]ruction of the primeval period cannot
employing it for the reconst[illegible]at Pietet never came to see this is the
possibly be entertained. T[illegible]he two first parts of Böhtlingk and
more remarkable, because [illegible] appeared in the year 1859, and the
Roth's Sanskrit lexicon had[illegible] these he might have derived a store
third in the year 1863; fren[illegible]ution, if not precisely on the subject
of the most profitable inform[illegible] which we have quoted, at any rate
of the names of the cereals,[illegible]nings of words in Sanskrit and the
about the history of the me[illegible] knowledge of Sanskrit. How little
value of the sources of our[illegible] of this work, pregnant as it was for
profit Pietet was able to make[illegible] may, to conclude, be inferred from
the whole science of language[illegible] not yet considered (i. p. 4):—
the sole equation which we hav[illegible] *rōbus* (?), Sans. *arbha* (!).

Ir. *arbha*,* *arbhas*, Lat. [illegible] Stokes (*Irish Glosses*, 1638) with the
"The Irish word is connected by [illegible]olish *orw*, "*acre*" (loan-word?). This,
Latin *arvum*, by the side of the W[illegible]*f.* Windisch *Irische Texte*, 372, *arbar*,
moreover, is satisfactorily guaranteed ("corn"). On the other hand, I have not
"grain," and O'R. Suppl. *arbaim*, "[illegible] except in O'Reilly.
found Irish *Mara*, "wheat," anywhere

To the last Sanskrit word Pictet, apparently following Wilson's Dictionary, assigns the general meaning of grass. He remarks that this is not given in the St Petersburg Dictionary, but nevertheless bases the most extensive combinations on it, and adds, naively enough: "..... *le sens des herbes en général qu'omettent, je ne sais pourquoi, les auteurs du dictionnaire de Pétersbourg*" (p. 196).

As a matter of fact, then, the only equation which can be employed for historical inferences, is, as Lassen maintained, Sans. *yáva* = G. ζεά, &c.

Pictet's method of procedure immediately provoked energetic protests in Germany. A. Weber, in two searching reviews of the work (*Beiträge z. vergl. Sprachf.*, ii. and iv.), condemned very severely, but quite justly, the uncritical way in which the author had made employment of Sanskrit. The notice of the first volume by A. Kuhn (*Beiträge*, ii pp. 369–82) was less severe, but in the main fully agreed with Weber's. Kuhn, after some general remarks, proceeds to an examination of details, and it is interesting to note what his views are now (1862) on the varieties of grain known to the primeval Indo-Germanic period. "But as regards results obtained in this way, the conclusion of the whole matter seems to be that neither animals, minerals, nor plants have names which agree in *all* the Indo-Germanic languages, whereas the names of the domesticated animals do, in the main, agree, and therefore point to the fact that these peoples were still in the nomad stage when they separated from each other. Wide-reaching agreements are, indeed, found in the names of individual minerals and plants; but, on the whole, either these agreements are confined to groups of languages, or it is often difficult to decide whether they really were originally common property, or have spread from one people to another by borrowing" (p. 271).

In spite of the serious suspicions which were at once raised by specialists against Pictet's work, the views which the *savant* of Geneva had pronounced on the original condition of the Indo-Europeans soon found acceptance in a wider scientific circle; in particular, French anthropologists and ethnologists frequently treated Pictet's conclusions as a safe basis for their own investigations. I will only refer here to two distinguished French historians of culture, F. Lenormant, in his work, *The Beginnings of Culture* (*Die Anfänge der Cultur*, German edition, Jena, 1875), and F. von Rougemont, *The Bronze Age, or the Semites in the Occident* (German trans., Gütersloh, 1869), the works of both of whom are most seriously influenced by Pictet's book.

The same remark applies to Alphonse de Candolle's well-known book, *Der Ursprung der Kulturpflanzen* (translated by E. Goeze, Leipzig, 1884), which Pictet's most erroneous statements, accepted as sterling coin, permeate in a most pernicious way.

But in Germany also nearly every eminent student of language endeavoured to work this newly discovered mine of Comparative Philology in the interests of the history of culture. About the same time as the second volume of Pictet's work, there appeared

two German treatises dealing with linguistic palæontology: *On the Primeval Indo-Germanic Period*, by F. Justi (*Über die Urzeit der Indogermanen, Raumer's hist. Taschenbuch*, iv. Folge, iii. Jahrgang, 1862, pp. 301–42), and *Der wirthschaftliche Culturstand des indog. Urvolkes* (*The Economic Condition of the Primitive Indo-Europeans*), by A. Schleicher (*Hildebrand's Jahrbücher f. Nationalökonomie*, i., 1863, pp. 401–11). The sketch which Justi gives of the primeval Indo-Germanic period does not differ essentially from Pictet's account, and is obviously influenced by it. Here we have pictured in glowing language the same simple but happy existence of a young and vigorous people, breeding cattle and working farms, with a developed family life and the beginning of a State organisation. A little paradise is put before our eyes. A feeling of envy creeps over us, their sorely afflicted descendants, when we read of these ancestors that "the only ills that threatened the lives of these fortunate men, seem to have been the wounds received in war, and the weakness of old age" (p. 323). For explaining the meaning of a word, especial importance is laid by Justi on the root. The word father means "the protector, master," the mother is the managing, busy house-wife, who calls her spouse "lord and master;" the son is termed "the begotten, the scion," the daughter "the milk-maid;" she remains by the side of her industrious mother and helps her; therefore the brother loves her, and calls her the sister "who dwells with him," while she honours him with the grateful title of brother, "nourisher" (p. 318). The subject-matter is arranged with more skill than in Pictet, inasmuch as in Justi the question as to the original home, the "paradise," of the Indo-Europeans is not discussed until the picture of their social relations and the Indo-Germanic fauna and flora have been disposed of. It is interesting also to note an objection which Justi himself raises against himself, when he contrasts his high estimate of the civilisation of the primeval period with the stage of culture in which history shows some of the Indo-Germanic peoples to have been, an objection of great and far-reaching importance, as we shall see, which Justi indeed contrives to dispose of very summarily: "If, however, it is objected," he says, p. 320, "that many members of the Indo-European family in times known to history and relatively much less remote from our own, were still in the hunting and fishing stage, we need only, in order to deprive the objection of all its force, put the further question: why did the whole population of many localities in Italy consist almost exclusively of fishers, whilst the Italians, nevertheless, rank amongst the most civilised of peoples?"

Much more scepticism was shown by Schleicher, who, in his work *Die deutsche Sprache* (*The German Language*), 1860, p. 71, *f.*, had not failed to touch upon the civilisation of the original Indo-Europeans. According to Schleicher's pedigree-theory, which we shall subsequently speak of in detail, the Slavo-Letto-German branch was the first to detach itself from the original language, and it was only later that the remaining portion of the original

language subdivided into the Hindu-Persian and Graeco-Italo-Celtic branches. Accordingly, in reconstructing the primeval period, he justly only lays weight on such words as can be traced either in all three groups of languages, or at least in the Hindu-Persian as well as in the Slavo-Letto-Germanic group. Agreements limited to the area of the European languages he does not regard as conclusive, because he considers that terms for civilised ideas may have been borrowed by one nation from another to a considerable extent, just as a similar process of borrowing can be traced in the case of tales and *Märchen* in the most ancient times. Schleicher is also of opinion that it is impossible to draw negative conclusions about the civilisation of the primeval period from the absence of given agreements: "for in the course of thousands of years many words may have been lost, many may have survived in one single language alone, and therefore have lost the means of demonstrating to us their primeval character. For this reason, however, our picture of their civilisation can contain nothing which does not belong to it. We are safe from the danger of imputing too much to our original people, while we may be certain that there are many sides of its civilisation which we have not the means to ascertain" (p. 404). The result is that there are many important items of civilisation which Schleicher cannot bring himself to ascribe to the primeval period, but which Pictet had imputed to it, such as the plough, mill, gold and silver, &c.

The end of the sixties brought further contributions to the investigation of the primeval Indo-Germanic period from Max Müller, in an essay on Comparative Philology (*Essays*, ii. 18–42 of the German edition, 1869),* W. D. Whitney (*Language and the Study of Language*, 1867), and Th. Benfey (*Einleitung in A. Fick's Wörterbuch der Indog. Grundsprache in ihren Bestande vor der Völkertrennung*, 1868, and *Geschichte der Sprachwissenschaft*, 1869, pp. 597–600). As we here have to do with three inquirers who together stand at the head of their science, it will be particularly interesting to consider side by side the views which they put forward almost simultaneously on the same subject. A. Kuhn will also have to be included, because it was on his vocabulary of the original Indo-Germanic language that Benfey's views were based.

At the very outset of his investigations, Max Müller declares, as Schleicher had declared before him, that the method employed in reconstructing the primeval period may not be reversed or used for drawing negative conclusions. "Because each of the Romance languages has a different name for certain objects, it does not follow that the objects themselves were unknown to the ancestors of the Romance peoples. Paper was known in Rome, yet it is called *carta* in Italian, *papier* in French" (*Select Essays*, i. p. 320). That does not, however, prevent him from occasionally making use of negative proofs of this kind. On the ground that the names given to the sea by the different Indo-Germanic peoples differ from

* In English this treatise had been published in the *Oxford Essays* in 1856. *Cf.* Max Müller, *Biographies of Words*, p. 129, *ff.*

lly designated a dead stagnant water (Lat
th the sea is denied to the primeval period,
cal combinations based thereon. Whitney
hat the country inhabited by the Indo-
extend to the sea-coast. A second negative
Müller from the fact that the Indo-Europeans
on word for the numeral thousand (*cf.* also
whereas Th. Benfey opines more cautiously
rmissible, *i.e.*, intelligible, names, none had
nd established itself as the only one in

acter of the vocabulary employed, Max
sider the agreement of Sanskrit a *conditio*
tructing the civilisation of the primeval
o ascribes the plough and the mill to the
complete agreement in root and suffix
erms compared; thus, acquaintance with
greatest decision to the original period,
ements in the series of words in question
Slav. *zlato*, Goth. *gulþ*) "differ widely
oes A. Fick regard the agreement of
ispensable in order to incorporate a word
l Indo-Germanic language. Words such
"fish" (*pisk*), "goat" (*plinta*), "
and many others, are assigned to the
anguage, although all of them are such
agreement of some European languages.
which can only be traced in a few or
pean language, are admitted into the
anguage if they recur in Sanskrit.*
nd, is taken about the agreement of
heir derivative syllables; in this way
the same word with totally different
uage; thus the stem *vat*, from which
-Europeans were acquainted with the
in three forms: *vat*, *vatas*, *vatasara*
our to recover forms of words which
riginal language, makes Fick's com-
searches into the history of culture
predecessors and simply directed to

ilisation itself of the ancient Indo
Müller they must have lived in the
e before their dispersion. "Hence
ek, but all Aryan languages, have

* To this B. Delbrück, in his criticism of Fick's work (*K. Z.*, xviii. p. 73), announce against inferring Indo-Germanic objects: "Particularly must we pronounce against inferring Indo-Germanic objects. For how do we know that they forms from Graco-Hindu-Persian parallels. For how do we know that they an period, and thus be about a couple may not belong to a Graco-Hindu-Persian Indo-Germanic period?" of thousand years younger than the rest

s that all differ so-
their peaceful words in common; hence if he domestic animals
strangely in their warlike expression. Thus by the same name
are generally known in England and India names even in Greek
while the wild beasts have mostly different ding to Whitney, the
and Latin." (*Select Essays*, i. p. 343). Accor he horse, the ox, the
domestic animals that had been tamed were h Benfey further adds
sheep, the goat, the pig, and the dog, to whic
the goose and the duck.

Agriculture, too, was already pursued, a d wheat and barley
cultivated (*Benfey* and *Whitney*); further all three inquirers agree
that the Indo-Europeans even then possesse d houses and walled
strongholds or towns (Sans. *puri* = G. πόλις).

On the other hand, they speak with an u uncertain voice on, and
at different times give different answers to the question, what
metals were known to the primeval Indo-Ge manic period? Thus
Max Müller in his essay referred to above (1856), had spoken of
iron as a metal known to the Indo-Europea ns. In his *Lectures on*
the Science of Language (1866 German, 1864 English edition, ii.
215), on the other hand, he endeavours to provide ample deduc-
tion that iron was still wanting to the Indo-Europeans before
their dispersion.

Benfey actually comes to three different conclusions with
regard to the equation Sans. *ayas*, Lat. *aes*, Goth. *aiz*. Whereas
in the Preface, p. viii, he was of the opinion that it "probably"
had the meaning of "bronze," in his *History of Comparative*
Philology he extends its meaning to "metal generally," subse-
quently, "bronze," "iron." Finally Oth. Benfey, who reserves
Anthropologie, ix. p. 192) declares: "This authorises me to state
explanation in detail for another occasion, nor in linguistic
that there is nothing in Sanskrit scholarship nor in Germanic languages, incon-
sistent with the results of my investigations in the domain of the Indo-Germanic
Germanic period, they are
knowledge of iron in the primeval Indo- ey expresses himself with
rather in complete harmony." Whitney tals was certainly known,
the most cautious: "The use of some m to question."
whether iron was amongst them is open

Special attention is devoted by Max Müller to the family life of
the ancient Indo-Europeans. He does not indeed lay any weight,
on the mere fact that the names for fat her, mother, brother, sister,
daughter, are identical in most Indo Germanic languages. The
high development and elevated mor ality of the Indo-Germanic
family he rather sees, as we have no ticed that Justi saw, in the
meaning of the roots from which the Indo-Germanic family names,
are derived. "The name of milkma given to the daughter of
the house, opens before our eyes a little idyll of the poetical and
pastoral life of the early Aryans. She might make herself useful in
the daughter, before she was marrie milking of the cattle, and it discloses
a nomadic household, was the milkm in the rudest state of society,
a kind of delicacy and humour ever daughter his little milkmaid
if we imagine a father calling his

rather than *sutâ*, his begotten, or *filia*, the suckling" (*Selected Essays*, i. p. 324).*

A further proof of a well-ordered family life in the primeval period is seen by Max Müller in the names which had even then been developed for relations springing from marriage, *i.e.*, relations which in English are expressed by the addition of the words "in-law." Terms such as "father-in-law" (Sans. *çvaçura*, G. ἑκυρός, Lat. *socer*), "daughter-in-law" (Sans. *snushâ* = G. νυός, Lat. *nurus*), &c., are unknown to savages. This is supplemented by a remark of Benfey's (Preface, p. viii), that the monogamy of the Indo-Europeans is shown by the equations *pátni* = πότνια "mistress," and *páti* = πόσις "master."

Arts of many kinds are ascribed to the Indo-Europeans by Benfey and Whitney: "They possessed weapons, especially arrows; they painted and made poetry; built waggons and boats with oars; . . . . they wove and made themselves clothes and girdles. Finally, they had divided time into years and months" (*Benfey*). "The art of weaving was practised; wool and hemp, and possibly flax, being the materials employed. The weapons of offence and defence were those which are usual among primitive peoples, the sword, spear, bow, and shield. Boats were manufactured and moved by oars. . . . . Mead was prepared from honey, as a cheering and inebriating drink. The season whose name has been most persistent is the winter" (Whitney, *Language and the Study of Language*, p. 207).

Whereas, according to Benfey, the Indo-Europeans were ruled by kings, whose wives were called "queens," and probably therefore shared their rank, Whitney finds no traces as yet of the development of a state organisation in the proper sense: "the people was doubtless a congeries of petty tribes, under chiefs and leaders, rather than kings, and with institutions of a patriarchal cast. Their religion was already sharply defined; they had several gods with established names, definite religious forms and even formulæ" (*Benfey*).

By the side of the works of the three investigators named, who directed their efforts to producing a general picture of Indo-Germanic civilisation, we have now to mention a series of shorter essays, the object of which was rather to consider single phases of the most ancient civilisation of the Indo-Europeans.

They treat with especial frequency of the Indo-Germanic animal kingdom. In the first place, we have to mention two papers by C. Förstemann, on *Language and Natural History*, *K. Z.*, i. pp. 491–505, and iii. pp. 43–62, the latter of which is accompanied by notes by A. Kuhn. In these the Indo-Germanic names for animals are brought together according as they are identical in all, most, or only single languages, in order to show thereby "the

* The view that Sans. *duhitár* "daughter" means "milk-maid" (root, *duh*) was first put forward by J. Grimm, who even compared Lat. *mulier*, *mulgere*, and *femina*: O.N. *fém*, *fám*, "milk." *Cf. Geschichte der deutschen Sprache*, p. 1001.

possibility of producing a complete Indo-Germanic linguistic history." He finds that throughout the whole area of the Indo-Germanic languages, *i.e.*, in Sanskrit, Greek, Latin, and Teutonic, the names for dog, cow, sheep, horse, and pig, bear, wolf, mouse, and otter (*cf. K. Z.*, iii. p. 59) agree. The five animals first mentioned must, therefore, have been brought into the service of man before the separation of the languages. The same subject is discussed in several papers by F. Potts in the *Beiträge zur vergleichenden Sprachwissenschaft* (*Contributions to the Science of Language*), which are distinguished less by definite historical results than by the fact that he has collected together much valuable material. The various sections grouped together under the general title *Contributions to the History of Culture*, treat of *The Distinction of various kinds of Cattle, Gelding* (ii. pp. 195–215), *The Cultivation of Bees* (ii. pp. 265–82)—this includes a discussion on *The Improvement of Fruit-trees* (ii. pp. 401–23)—further of *Dogs* (iii. pp. 289–326), *Goats* (iv. pp. 68–79), *Birds* (iv. pp. 79–98). A. Baumeister deals with the Indo-Germanic animal kingdom from the side of language, in *Ausland*, in a more popular manner, under the following heads: (1) ass; (2) horse (*Ausland*, 1866, pp. 924 and 997); (3) ape, lion, camel, elephant; (4) domestic animals; (5 and 6) origin of names of animals; (7) dog, wolf, fox (*Ausland*, 1867, pp. 91, 157, 472, 507, 1133). The same subject is discussed by Franz Misteli (*cf. Bericht über die Thätigkeit der St. Gallischen naturwissenschaftlichen Gesellschaft*, 1865–66, pp. 139–69, and *Ib.*, 1866–67, pp. 31–59). In his method of proving the acquaintance of the Indo-Europeans with certain animals, Misteli models himself on A. Pictet. He too moves in the vicious circle which is conspicuous in Pictet. Since "on linguistic grounds"—what, is not stated—the home of the Aryans must be placed north of the Himalayas, on the boundaries of India and Persia (p. 141), therefore, the Indo-Europeans must have been acquainted with the tiger, as the habitat of this beast of prey extends to this district. It is, however, well known that the tiger cannot pretend to a primeval name. The fox also, to say nothing of other animals, is assigned in the same way to the primeval Indo-Germanic fauna. For this animal too, when we consider his geographical distribution and reflect that geese and poultry were known as domestic birds to the Indo-Europeans before their dispersion (p. 157), we might expect a primeval name. But "crafty Master Reynard tricks us even in matters of science." The only trace of the original state of things has, according to Misteli, been preserved in Lat. *vulpes*, which he compares with Lat. *lupus*, G. λύκος, Sans. *vṛkas*, to show that fox and wolf received the same name in the primeval period, viz., "robber" (root, *vark*). After these remarks it is unnecessary to say anything else of the collection which he gives as the result of his investigation (p. 58). According to it the following animals were known to the Indo-Europeans:—

Beasts of Prey.—Tiger, dog, wolf, fox, marten, polecat, and

weasel—without satisfactorily distinguishing the two latter—otter, bear, hedgehog.

Rodents.—Squirrel, mouse, hare, beaver.

Solidungulous.—Horse.

Ruminants.—Camel, stag, goat, sheep, cow.

Cloven-footed.—Pig.

It is interesting to note the side-glances which Misteli casts on the fauna of the Swiss lake-dwellings, for purposes of comparison. As, however, he ascribes to the primeval Indo-Germanic period the domestication of certain animals, such as the horse, pig, poultry, which according to Rütimeyer's investigations (*Die Fauna der Pfahlbauten*) were unknown to the most ancient periods of the lake-dwellings, it is not difficult to understand that, in his opinion, the Indo-Europeans cannot possibly be compared, as regards civilisation, with the lake-dwellers of the Stone age. In the same way, A. Schleicher (*op. cit.*, p. 111), assuming that the Indo-Europeans, before their dispersion, were acquainted with metals and metallurgy, ascribes the prehistoric monuments of the European Stone age to non-Indo-Germanic peoples. These important questions will engage our close attention subsequently.

An entirely new side of Indo-Germanic civilisation was brought into prominence by R. Westphal in a paper on the comparative metrical systems of the Indo-Germanic peoples (*Zur Vergleichenden Metrik der indog. Völker, K. Z.*, ix. pp. 437–58). If, he inquired, a hundred different traits in the belief about the gods, in the structure of myths and sagas, can be traced back to the primeval period of the Indo-Germanic peoples, ought it not also to be possible to infer the form with which this most ancient of poetry invested its material? And, in fact, Westphal believes that he has detected this ancient form in the agreement of the three iambic verses of the Greeks (dimeter, acatalectic, and catalectic trimeter) with the three metres of the Vedas (*Anushtubh* and *Gâyatrî*, *Jagatî*, *Virâj*, and *Trishtubh*), and further with the rhythmic verse of the ancient Persians. This ancient Indo-Germanic poetry was based neither on accent nor quantity, but was an affair of syllables purely. It has been preserved intact in the metres of the Avesta, and is reflected in the Vedic hymns also, so far as the second half of the iambic dipodia is quantitive, *i.e.*, purely iambic. In Greek metre, also, this primeval principle of syllable-counting occasionally still manifests itself, *e.g.*, in the license allowed by prosody at the beginning of a rhythmical verse (*cf.* p. 140).

The scheme of the primitive Indo-European epic verse may be represented in accordance with these investigations, as follows:—

Westphal's work has proved to be the foundation of a comparative study of Indo-European metres, which has lately become of importance for understanding the origin of the hexameter, for which I may refer to Frederic Allen (*Ueber den Ursprung des*

homerischen Versmasses, *K. Z.*, xxiv. p. 556, *ff.*), and H. Usener (*Altgriechischer Versbau*, Bonn, 1887).

That the Indo-Europeans composed, *i.e.*, possessed metrical songs, is, we may remark incidentally, the opinion of all the investigators whom we have thus far mentioned. Benfey and Fick endeavoured to support it by linguistic arguments, the former basing his statement that: "They (the Indo-Europeans) painted and composed poetry, especially hymns" obviously on Fick's equation, Sans. *sumná* = G. ὕμνος; the latter appending to his comparison of Sans. *padá* "metrical unit, quarter of a verse," with Zend *padha*, *pad* "word, song," πούς "metrical foot, unit of verse," A.S. *fit* "poem, song" (?) the comment: "The remarkable recurrence in four languages of the application of 'foot' to a portion of a verse shows the existence of metrical composition amongst the Indo-Europeans."

A still further step was taken by A. Kuhn in a paper in his *Zeitschrift* (xiii. p. 491), for he endeavours to trace whole formulæ back to the beginning of Indo-European poetry. He distinguishes even between two classes of remains from the most ancient poetry, first, riddles, things celestial, the creation of the world, &c., and next, spells for charming away diseases and evil spirits. As an example of the latter, the well-known Merseburg charm for a lame horse:

Bên zi bêna, bluot zi bluoda,
Lid zi gilidên, sôse gelîmida sîn.

is compared with a very similar one in the Athar Veda (iv. 12):

"Let marrow join to marrow, and let limb to limb be joined.
Grow flesh that erst had pined away, and now grow every bone alse.
Marrow now unite with marrow, and let hide on hide increase."

We have still to mention, in this place, an isolated paper by E. C. Pauli on the names given to the parts of the body by the Indo-Europeans (*Über die Benennungen der Körperteile bei den Indogermanen*, Programm, Stettin, 1867, reviewed in *K. Z.*, xvii. p. 253). A comparison of the primeval names of the parts of the human body, p. 27, *f.*, shows that the Indo-Europeans possessed a fairly thorough anatomical knowledge of their bodies.

If, before proceeding to a new work, of the very greatest importance for linguistic and historical research, we take a brief retrospect of our review thus far, we shall observe that all the investigators we have mentioned agree in regarding the level of Indo-Germanic civilisation as relatively high.

A people possessing a well-regulated family and national life, familiar with cattle-breeding and agriculture, owning nearly all the domesticated animals which at the present day are in the service of man, experienced in mining, and working the most important, if not all, of the metals—such a people seemed to be the fitting representatives of the primeval period of a race which was destined to play so important a part in the development of civilisation. It was natural that by the side of such a picture, the state

of things, which was revealed in the most ancient monuments of Europe by the steady growth of anthropological and prehistoric research, should stand in glaring and irreconcilable contrast. The sole possible explanation seemed to lie in the assumption of a double layer of population in Europe, a pre-Indo-Germanic, such as might have belonged to the lake-dwellings of Switzerland and the kitchen-middens of Denmark, and an Indo-Germanic, which appeared on European soil as the apostle of a higher culture.

The investigators show more difference among themselves in the *method* of reaching the primeval period of the Indo-Germanic peoples by the aid of Comparative Philology, and this is the more intelligible because, strictly speaking, none of them had subjected it to serious examination from all points of view, linguistic and historical. Such an examination ought, indeed, to have been suggested by the difference in opinion as to the earliest cleavage of the original language; for it was obvious that a totally different linguistic basis for the investigation of the primeval period must be given by the assumption that the original people first divided into a Hindu-Perso-South-European and a North European division, from what would be given by the assumption that it divided into an Asiatic and an European half. In the face of this absolutely undecided dispute it would have been safest and most cautious only to employ such equations for the civilisation of the primeval period as were safely established by the agreement of the Hindu-Persian, North, and South European branches. Yet Schleicher and Forstemann alone carried out this idea. An equally careful examination would have had to be made of the formal elements of the comparative vocabulary. A. Kuhn had indeed insisted that identity of root was by no means enough to establish the primeval existence of the concept residing in the series of words, and that agreement in the suffix was quite as necessary as agreement in root. Yet investigators like Pictet, Justi, Max Müller, and others paid scarcely any attention to this requisite, and consequently Fick's book, in spite of its great defects, may be so far termed an advance, that it endeavours to class together those words in the Indo-European languages which agree in root and in formative syllables, and to offer them to the historian of culture as a foundation.

On the other hand, agreement prevailed, in theory at least, with regard to the fundamental principle that concepts which could not be traced etymologically within the circle of the Indo-Germanic languages, were not to be employed for drawing negative conclusions about the primeval period, although in practice such conclusions were not unfrequently drawn.

The last thing that investigators, so far, had troubled themselves about was to establish the original meaning of a series of etymologically-related words: in most cases they were quite content to transfer the meaning, which the equation had in historical times, to the primeval period without more ado. "As Sans. *pur* = G. πόλις meant "town," the Indo-Europeans must have lived in towns; as Sans. *açva*, G. ἵππος, &c., were employed of the domesti-

cated animal, the horse must have been used as a domesticated animal in the primeval period, and so on.

The merit of detecting and attacking this, the weakest, side of linguistic palæontology is due to a remarkable work, which imparted a new direction in every respect to research based on language and history: V. Hehn's *Cultivated Plants and Domestic Animals in their migration from Asia to Greece and Italy, and the rest of Europe, Sketches from History and Language* (*Culturpflanzen und Haustiere in ihrem Übergang von Asien nach Griechenland und Italien sowie in das übrige Europa. Historisch-linguistische Skizzen*, 1st ed., Berlin, 1870; 2nd ed., 1874; 3rd ed., 1877, from which we mostly quote; 4th ed., 1883; 5th ed., 1887).

V. Hehn's main object, as the title of the book indicates, was not to reconstruct prehistoric periods of civilisation, but to show how a considerable number of the most important cultivated plants and domestic animals migrated, some of them under the full light of history, from the civilised area of the Orient to the peoples of Europe, who were still plunged in the night of barbarism; to act wherever they come as the most powerful of levers for the production of a higher civilisation. "What is Europe but the stock, barren in itself, on which everything had to be grafted from the Orient, and so brought to perfection." These words of Schelling are the motto of the book, and its real object is to prove their truth. Only, as the author is performing his task in the most brilliant manner, by a combined knowledge of history, language, and natural history, perfectly astounding in its wealth, he cannot escape asking himself: What was the culture of the Indo-Germanic peoples like before they came in contact with the culture of the Orient? what was their civilisation at the time when they first penetrated into the wildernesses of Europe? what when they were still living with their eastern brothers in Asia? Those passages of the book which are devoted to answering these questions will claim our special attention.

V. Hehn does not base his views about the primeval period of the Indo-Europeans mainly on philological combinations; his work is styled Sketches from History and Language, not from Language and History. But every indication of a less sunny prehistoric period which penetrates through the brilliant veil of classical antiquity is eagerly collected and brought into comparison with the scattered notices which have been transmitted by Greek and Latin authors, both of antiquity and of the Middle Ages, about the manners and customs of non-classical Europe, above all about the northern Indo-Germanic tribes, the Celts, Teutons, and Slavs.

It is but seldom that he uses language as his starting-point; he employs it, provided only it is adapted for the purpose, to explain, amplify, and strengthen his picture. Philology and the science of language are here combined in a magnificent manner. It is on a foundation of this kind that V. Hehn unrolls a picture of the primeval period, which certainly differs from that of investigators whom we may term mere comparative philologists, as does the

darkness of night from the light of day. Hehn is well aware of this contrast, nor is there wanting a sharp polemic against the method usual up to that time of employing Comparative Philology for inferences about the history of culture. There are, if I am not mistaken, two charges particularly which he brings against it.

"He," says V. Hehn, p. 488 of the 3rd edition, "who puts new civilised ideas into old words, will certainly re-discover our modern life without difficulty in the period of the earliest beginnings." We have already seen that all the earlier students of language had unsuspiciously ascribed the domestication of the horse, for instance, to the primeval period, because the equation of the Sâns. *áçva* and its cognates left nothing to be desired from the point of view of language. V. Hehn pronounces a very different judgment on the value of this piece of evidence: the equation quoted proves to him nothing but that the Indo-Europeans before their separation possessed a word *akvo* and applied it to the horse ("the swift," root, *ak*). The domestication of the animal is not even hinted at in language, and should the history of culture succeed in proving that it was not until a relatively late period that the domesticated animal appeared among the Indo-Germanic peoples, the certain inference would be that the equation *akvo*, *ἵππος*, can only have been applied to the wild horse in the primeval Indo-Germanic period. Let us listen to V. Hehn's own words about another animal which is usually thought to have certainly accompanied the migrations of the Indo-Europeans, that is, the goat: "The Greek *αἴξ*, *αἰγός* 'goat' recurs in Sanskrit and in Lithuanian, and therefore goes back to a time antecedent to the separation of the peoples. It is not, therefore, a necessary unconditional consequence that the primeval people possessed the goat as a domestic animal; the name may have been given to any bounding beast of chase, and subsequently have been transferred to the domestic goat, when it became known—a possibility which in similar cases should more often be borne in mind by those who, on the strength of the presence of common words, draw inferences about the state of culture of the primitive people with such certainty" (p. 516). In the same way doubt is cast upon the linguistic arguments for the agriculture of the Indo-Europeans. "That they (the Indo-Europeans of Greece and Italy) cultivated the soil, and subsisted on the fruits of Demeter, before they settled in their respective countries, in the Græco-Italian period, nay! even in the heart of Asia, is an assertion often made with more or less confidence, the proofs of which are for the most part scarcely valid. Greek *ζειά*, spelt, *ζείδωρος ἄρουρα*, the grain-giving soil, Lithuanian *javas*, corn, pl. *javai*, grain in general, as long as it is on the stalk, *javiena*, stubble, is indeed a correct equation, but it only shows that at the time when the Greeks and Lithuanians were still undivided, the name was given to some variety of grass, having perhaps edible ears (cf. Th. Mommsen above, p. 16). The same is the case with *κριθή*, Lat. *hordeum*, O.H.G. *gersta*; the language of a nation whose occupation consisted in pasturing

animals must have been peculiarly rich in names of plants and grasses," &c. (*cf.* p. 58 *seq.*). Ἄγρος *ager*, and its cognates originally only meant "field." Almost against his personal view, which is the opposite (*cf.* p. 487), Hehn, "in a subject which," as it seems, "allows at the most only of hesitating conjectures," admits a kind of half-nomad agriculture, on account of the kinship of G. ἄγρος, Lat. *arare*, &c., which, however, owing to the variation of the Sanskrit, proves nothing as to the primeval period, but the hated occupation was again given up by the Greco-Italians, when the new instinct to migrate began to work. The plants cultivated may have been the millet, bean, and rape (*cf.* p. 59).

From the same point of view V. Hehn utters a warning against foisting modern meanings into old verbal roots, which, agreeing as they do in different Indo-European peoples, seem to prove that certain arts were practised in the primeval period.

"As for weaving," he says, p. 497, "there seem to be pieces of linguistic evidence which point to the practice of this art before the dispersion of the peoples and before their migrations. If we did but know for certain that these words were applied in the primeval period, not to ingenious modes of twisting, plaiting, and sewing, but to spinning the thread on the spindle and to weaving, in the proper sense of the word, on the loom! He who ascribes a knowledge of weaving to the original people should not forget that, from its rude beginnings to its perfection in historical times, this art has gone through many stages. How ready the imagination of the comparative philologist is to picture a modern loom and flying shuttle," &c. (*cf.* also Th. Mommsen, *History of Rome*, p. 17). The second point which distinguishes V. Hehn from earlier linguistic palæontologists lies in the greater extension that he gives to the conception of loan-words. We are not here referring to the fact that V. Hehn, in cases where the phonetic form, as for instance in the case of the G. οἶνος (*cf.* p. 68) and G. χρυσός (*cf.* p. 498), &c., does not point decidedly either to original connection or to borrowing, is usually glad to decide in favour of the latter, on the strength of general considerations drawn from the history of culture. What is new, though it had been previously indicated by Kuhn (*cf.* above, p. 21) and Schleicher (*cf.* above, p. 23), is the idea that the agreement of certain terms of civilisation which are confined to the European languages, and therefore hitherto had been explained by a reference to a European primeval period and to an original European language, might also be conceived to be due to the fact that, when the European peoples were differentiated locally and geographically, a root with a general meaning was specialised by one people and then spread by borrowing from one people to another. V. Hehn expresses this idea as follows (p. 487): "We must reflect that in those early periods languages had not yet moved far apart from one another, and that if an art, tool, &c., was borrowed from a neighbouring people, the name which they had given it could easily and readily be transposed into the dialect of the borrowing people. If, for instance, one verb, *molere*, with the meaning of grinding, break-

ing in pieces, and another, *serere*, with the meaning of scattering, existed in all the languages of these hitherto pastoral peoples; and if one of them gradually learned from another the art of sowing and milling, it must, out of all the various stems of similar general meaning, in order to express the new process, have specialised the very one that had been used by its instructors. Similarity of expressions therefore only proves that, for instance, the knowledge of the plough spread within the limits of the Indo-Germanic family in Europe from one member to another, and that one member did not obtain it, say, from the south-east, from Asia, by the agency of the Semites from Egypt; another from the south-west, from the Iberi, on the Pyrenees and the Rhone; a third from a third unknown, original people," &c. Let us now endeavour, in contrast to the pictures of Indo-Germanic civilisation with which we have previously made acquaintance, to sketch the primeval period as V. Hehn conceives it. We must premise that he does not distinguish definite prehistoric periods, but in his delineations has in view mainly the great "Aryan migration."

The Indo-Europeans of that period are a wandering *pastoral people*, whose migration into Europe may be compared somewhat to the military immigration of the Semitic shepherds into Palestine. Their herds may have consisted of cattle, sheep, and pigs; they still lacked the horse (to the history of which a special section has been devoted since the second edition), ass, mule, goat, poultry of all kinds, cat. The tribe of domestic animals is scanty. Wool is pulled from the sheep and pressed, by stamping, not woven, into felt cloths and covers; on the other hand the women understood how to plait mats and web-like stuffs, nets for fishing and hunting, out of the bark of trees, especially of the lime-tree, and out of the stalk-filaments of many plants, especially of the nettle family; as also to stitch together the raw hides of wild and domestic animals by means of stone or wooden needles.

The ways and habits of *agriculture*, which did not begin until the end of the migrations, were not wholly unknown. The cultivation of fruit-trees belongs to a still later period.

The *food* of the primeval period consisted of meat and milk, the latter of which was not yet worked into cheese and butter (p. 138). Mead, a drink made from honey, which was obtained from the wild bees of the huge forests, is the oldest intoxicating drink known to the Indo-Europeans who migrated into Europe (p. 136). Beer and wine are unknown. Salt was not found in the original Asiatic home, but the tribes that came to Europe made acquaintance with it simultaneously (*cf.* V. Hehn, *Das Salz, eine culturhistorische Studie*, Berlin, 1873, pp. 14 and 22).

Human *habitations*, in winter, consisted of holes in the ground artificially excavated and covered with a roof of turf or manure; in summer, of the waggon itself or, in forest regions, of slight tent-like huts made of wood or wicker-work. The further south a tribe was, the easier it was to winter the cattle, which in the north only found food under the snow with difficulty during the rough winter

months, and when circumstances were unfavourable must have perished accordingly—for making sheds for cattle and storing dried grass for the winter are arts of later origin, which were only discovered as a result of the development of agriculture.

The only *metal* known to the immigrating shepherds was copper (p. 500), and that they did not know how to manufacture into tools, &c. The Indo-Germanic primeval period belongs rather to the stone age. For bows wood was furnished by the yew, for the shaft of the spear by the ash, and also by the alder and the privet, shields were made of a withy-work of willows; the trees of the primeval forest, of gigantic girth, were hollowed out by means of fire and the stone-axe into huge boats. The property of the wanderers, their milking-vessels, hides, &c., was conveyed on waggons, a machine invented early, which consisted entirely of wood, and in which wooden pegs took the place of the iron nails used afterwards.

Sinister features are to be discerned in the *family-life* of the primeval period. The old men, when useless for fighting, either go voluntarily to death or are violently slain; so too the incurably sick. The chieftain is followed to his grave by his thralls, wives, horses, which were in later times bred in half-wild herds (pp. 19 and 26, *f.*), and dogs; wives were either bought or stolen; the new-born child was either taken up by the father or rejected and exposed. The family bond and the authority of the patriarch, with the increase of population, expand into the tribe which, at first narrow, eventually becomes more comprehensive; but it is not until the half nomad tiller of the soil has become a settled cultivator of trees that the idea of property in its full sense is developed, that disputes as to rights and property arise between neighbours, that political order is established (p. 105).

The frame of mind of a cattle-butchering, shepherd people is ruthless and bloody, full of superstition and under the influence of sorcery. The powers of nature have not yet become personal or assumed human form; the name *god* still means *sky*. The first attempt at abstraction is seen in the formation of the decimal system, which however, still lacks the conception of thousand. For the rest, the language forms a relatively intact, highly evolved organism, ruled from within by living laws, and is even now, thousands of years later, the marvel and the joy of the grammarian, and such as only grows and develops in the darkness of a sheltered spirit and consciousness whose operations are immediate.

The attitude of marked opposition, taken up by Hehn's book to the views previously put forward by Comparative Philologists about the original Indo-Germanic period, was not made enough of, as regards its importance for the further development of linguistic palæontology, by the critics, who confined themselves mainly to noticing and almost unanimously recognising the solution of the problem set forth in the title of the work. Except G. Curtius, who blames, in the *Literarisches Centralblatt*, 1870, p. 553, Hehn's

apparently frequent neglect of Sanskrit, as for instance when talking of hemp (Sans. *çaṇá*), salt (Sans. *sará*, *cf.* below, p. 40), weaving (root *stâ*, στήμων, ἱστός, &c.); and *ib.*, 1874, p. 1751, does not feel convinced by the author's mode of proving "that the horse did not yet accompany our forefathers on their great travels through the world"—the only persons who give their full attention to the aspect of Hehn's investigations described by us, are G. Gerland in the *Jenaer Litteraturzeitung*, 1875, 641, and W. Tomaschek, *Z. ö. G.*, 1875, p. 520, *ff.* And even they have objections to urge. The former thinks that "the author is generally not quite just to the Indo-Europeans," and pushes too far the undoubtedly correct idea that much which now seems general property is really only borrowed; and that what so easily happens to students of language who undertake ethnological investigations, happens occasionally to him (Hehn): they attach the most weighty and wide-reaching ethnological conclusions to the thin thread of a single series of words, which is by no means able to bear the weight of such an inference.* What characterises Tomaschek's very detailed review, on the other hand, is the attempt to connect large portions of the Indo-European vocabulary of words important for the history of culture not, as Hehn does by preference, with the Semitic languages, but rather with the tongues of northern peoples, Finns, Ugrians, and Tatars. Thus language is made to bear witness "to primeval contact and mutual exchange of civilisation between northern and Indo-European tribes" (p. 532).

Elsewhere Hehn's work seems to have exercised no influence on subsequent works on linguistic palæontology. This can indeed hardly be wondered at in the case of a book which appeared almost simultaneously with the first edition of Hehn's work—J. G. Cuno's *Researches in the Department of Ancient Ethnology* (*Forschungen im Gebiete der alten Völkerkunde*, Teil. i., 1871), and in which, pp. 22–27, the question is discussed whether the original Indo-Europeans practised agriculture. Cuno answers this question in the affirmative very confidently.

More remarkable is it that several years after Hehn's decided attack on the whole method of linguistic palæontology, a work could appear in which the old theme is treated in the old way, without even devoting a word to Hehn's ideas. This work is a book that appeared in 1873—Fick's *The Former Linguistic Unity of the European Members of the Indo-Germanic Family* (*Die ehemalige Spracheinheit der Indo-Germanen Europas*), in which

* An example of this may, perhaps, be afforded by the chronological conclusions which Hehn (p. 289) draws, from the northern names of the domestic fowl, about the appearance of this bird in northern Europe.

Thus, for instance, he infers from the Finnic word for hen, *kana*, which is borrowed from the Teutonic (Goth. *hana*, O.N. *hani*, O.D. *hano*), that the German sound-shifting had not begun when it was borrowed. As, however, Finnic, owing to its poverty in consonants, represents the Teutonic spirants *f* by *p* (*pelto* : *field*), *th* by *t* (*tarvet* : A.S. *thearf*), everything seems to indicate that the *k* in *kana* is also but a make-shift.

on pp. 266–385, a tolerably detailed picture is given of the primeval civilisation. Fick overflows with righteous indignation against those who would sully the brilliance of the primeval Indo-Germanic period. "Such attempts," he says, on p. 268, without explaining who or what attempts are meant, "to throw as much dirt as possible upon the *origines* of man, are haunted by the Darwinian father of apes and men, a phantom which philosophising zoologists may find useful, but which must be banished from researches into the antiquities of Indo-Germanic man, because here everything is seen to be penetrated with good sense and sound morality." This good sense and sound morality the author succeeds, by the exercise of an incomparable boldness of imagination, in discovering in the vocabulary of the primeval period. "Father and mother," he says, on p. 267, "recognise in the son and daughter the future father and master and the future mother and mistress of the house, and accordingly *sunu* and *dhugtar* testify to the respect and reverence with which children were regarded and treated by parents. Further, a good omen is conveyed in the words, viz., that son and daughter will attain to the position of father and mother, and not be snatched away by a premature death." And why all this?—"Because *sunu* and *dhugtar*," at any rate according to Fick, "mean 'he who begets' and 'she who suckles.'" An equally profound significance is conveyed in the word for grandson. "It implies that the grandson was as near and dear to the grandparents as the son, that they transferred all the paternal and maternal love, which they had shown to the son, to the grandson, the rejuvenated son" (p. 276). And why? "Because *naptî, naptar* originally meant not only grandson but also son, descendant generally." On the other hand, Fick's book contains a careful collection of those words important for the history of culture which are confined to the European languages, and has, thereby, as we shall see further on, rendered a service to primeval Indo-European history which is not to be undervalued.

We must remark here, however, that Fick, differing from his *Dictionary of the Fundamental Indo-G. Language* (*Wörterbuch der Indog. Grundsprache*), both in the work we are discussing, and in his *Comparative Dictionary of the Indo-G. Languages* (*Vergleichendes Wörterbuch der Indog. Sprachen*, 2nd edition, 1870–71; 3rd, 1874), only allows, as valid for the primeval period, such equations as can be established by the agreement of at least one European and one Asiatic language.

There is much interest in making acquaintance with Th. Benfey's more recent views on comparative philology and primeval history. Unfortunately, they can only be put together from three small works by this scholar, a review in the *Göttinger Gelehrten Anzeigen*, 1875, p. 208, *f.* (of a paper, *Der Hopfen, seine Herkunft und Benennung, zur vergleichenden Sprachforschung*, 1874; cf. *Litterarisches Centralblatt*, 1875, No. 12), and two articles in the Supplement to the *Allgemeine Zeitung*, 1875, which are entitled, *Rasiermesser in Indo-Germanischer Zeit*. (*The Razor in Indo-*

Germanic Times, No. 96), and *Die Indo-Germanen hatten schon vor ihrer Trennung sowohl Salz als Ackerbau* (*Salt as well as Agriculture known to the Indo-Europeans before their Dispersion*), No. 208. In the first place the paper on the razor in Indo-Germanic times is interesting because of its remarks on method. The occasion of this paper was a lecture delivered in Rome by W. Helbig on *A Primitive Kind of Razor* (a summary is to be found in the *Allgemeinen Zeitung*, 1874, Suppl., No. 352, and the lecture itself in *Im Neuen Reich*, 1875, p. 14, *f.*), in which, amongst other things, the fact that in the necropolis of Alba Longa, from which we may derive "an idea of the Indo-Germanic condition of the *Prisci Latini*," razors are not to be found, is used to show that they cannot have formed part of the stock of culture which belonged to the Indo-Germanic races before their dispersion. Now, as it was Benfey, who previously, on the strength of Fick's equation, Sans. *kshurá* = *ξυρόν*, had ascribed the razor to the Indo-Europeans, it was incumbent on him to undertake its defence against attacks, as a primitive instrument for beautifying the person. The mere fact that a word agrees, both in form and meaning, in several Indo-Germanic languages does not incline Benfey to therefore assign it without more ado to the primeval period. He only claims a presumption in favour of its originality; but there are three possibilities, from the purely linguistic point of view, which may show this presumption to be erroneous or doubtful: first, if it can be shown that one language has borrowed the word from another; secondly, if both have borrowed it from a third; and finally, it may be proved doubtful, if it can be shown that the words may have been formed independently after the dispersion. This last possibility affects all words "formed on the one hand from bases and formative elements which, in the languages in question, have retained after the dispersion so much vitality as to be capable of uniting; and, on the other, which have preserved the etymological significance of such a union, or at least have not essentially departed from it." As an example of such a case, Benfey quotes the equation of G. *τέρψις* (from *τέρπ-τι*) and Sans. *tṛpti*, which cannot be regarded as necessarily inherited from prehistoric Indo-Germanic times, because both the original verbal root, *tarp*, and the suffix *-ti*, for making abstract nouns, have retained their vitality both in Greek and in Sanskrit (*τέρπω*, *tṛpnómi*). None of these three possibilities affects the equation, Sans. *kshurá* = G. *ξυρόν*; for as regards the third, which alone comes into consideration here, the verbal root *ksu*, on which the equation is based, is only preserved in the G. *ξέω* (*ξεϜ-ω*), and the suffix *-ra* (*-ρο*) retains its vitality in neither language.

But Benfey supposes another objection. "If we consider the length of time which elapsed between the separation of the Greek and Sanskrit peoples from the parent stem, the possibility is by no means excluded that even after the separation, the counterpart of the verb *ξυ* may have survived in Sanskrit or its immediate

predecessor, Hindu-Persian, and that both in Greek and in Sanskrit the suffix *-ra* may have for some time preserved its categorical meaning, and that in this period the two words may have been formed independently." But Benfey meets this objection by the absolute identity in meaning of the two words: for "the meaning 'razor,' or perhaps originally only 'instrument for cutting the beard,' is so far removed from the categorical or etymological meaning 'smooth' (ξέω, 'smoothe'), that it would be a most wonderful and inexplicable accident in the two languages quite independently developed the one from the other."*

But in spite of the arguments which speak for the acquaintance of the Indo-Europeans with the razor, Benfey is by no means inclined to "regard the linguistic point of view as the only one from which questions of this kind can be finally decided." Nay, as against his linguistic proofs, he would regard it as possible that by some chance, *e.g.*, "by means of historical documents, it might be irrefragably proved that the Indo-Europeans before their dispersion possessed no instrument for shaving the beard." But what, his argument proceeds, are we to make of the fact that in the excavations at Alba Longa no razors are found? Are these remains of old Italian civilisation not separated from the distant primeval Indo-Germanic period by a period "long enough for Indo-Germanic culture to have suffered many losses, and by the creation of a new culture to have received so many additions, that these remains may represent anything but the condition of the Indo-Europeans in the time of their unity"? "And would it be impossible that the forefathers of the *Prisci Latini*, on their long journey from the original Indo-Germanic abode to their new home, a journey which certainly lasted a long time, and must have involved great suffering, need, and privation, may have lost both the taste and the art of removing the beard, and therefore the instrument also?"

Here we have come to one of Benfey's fundamental propositions, which is of the most sinister import for the further development of linguistic palæontology. As his writings show, he has carefully followed the attacks which V. Hehn, relying on the low state of civilisation in which history shows many of the Indo-Germanic peoples to have been, directs against the assumption of a relatively highly civilised primeval period maintained by Benfey and others; and Benfey tries to parry them by putting forward the following proposition:—The teaching of history as to the historical beginnings of the individual peoples cannot be regarded as furnishing any criterion for the primeval period, which is separated from them by hundreds, if not by thousands of years, *i.e.*, by a space of time, within which things may have been

* Helbig in his reply to Benfey's paper (*Allgemeine Zeitung*, 1875, Suppl. 117) suggests, as against this argument, the possibility that the word originally was used of a sharp instrument used for scraping—perhaps the primitive tool with which hair was removed from hides—and was only later transferred to the cognate idea of razor.

completely revolutionised by the loss of ancient and the acquisition of new elements of civilisation. The possibility of the loss of ancient elements is especially insisted upon. "He who thinks," he says in the *Göttingen Gelehrter Anzeigen*, 1875, p. 210, "that the assumption of this comparatively high civilisation for the primeval period is opposed by the fact that at the beginning of history we find them (the Indo-Europeans), especially the north European branch, in a condition, relatively, anything but advanced, should reflect through what inhospitable lands they may have had to travel after their separation, and what struggles they may have had to go through before they took to themselves new and permanent abodes. That they must thus have lost many of the elements of civilisation which they carried with them, may be conjectured *a priori*; of many of these losses their languages give us reliable evidence." As examples of such a decline from a once higher level of civilisation, Benfey produces two cases. As a comparison of the Greek χίλιοι with the Sanskrit *sa-hasra* shows (*sa* in the Sanskrit word means "together," and corresponds to the Greek ἑ in ἑ-κατόν = *centum*), the concept "thousand" had been developed by the original people. Those Indo-Germanic peoples, however, which lost the word used to express that idea, had "after their separation fallen into a condition in which they never, or scarcely, had occasion to make use of this numeral, that the ancient word entirely perished from memory" (*cf.* Benfey's earlier opinion on this point, p. 23, *supra*). Again, gold and silver, in Benfey's opinion, were known to the original people. The former was called *gharta*, the latter *arg-anta* or *arg-ura*. But from the fact that only the Greeks and Italians have preserved the word for silver (ἄργυρος, *argentum*), the Teutons and Slavs alone that for gold (*gulþ-zlato*), the only inference that can be drawn is that on their wanderings, the former came across silver but not across gold, while the latter, on the contrary, came across gold but not across silver. "Thus they lost the memory of the ancient names, and were compelled, when the former again became more familiar with gold, the latter with silver, to fashion fresh names in the place of those which they had forgotten, just as happened to the Romans and others in the case of the designation of the numeral 'thousand.'"

Amongst Benfey's other views about the original stock of culture, special attention must be paid to his assertion that the condiment salt was known to the Indo-Europeans, an opinion also shared by Müller and Schleicher, inasmuch as it shows how unsafe even the most distinguished scholars may sometimes prove, as regards the linguistic basis for an important proposition in the history of culture. As we have already seen, V. Hehn had denied that the Indo-Europeans were acquainted with salt, because the European name for it is not echoed in the Asiatic languages. Like Curtius (*cf.* above, p. 36), Benfey, in the paper already mentioned on salt (*Supplement to Allg. Zeitung*, No. 208), finds fault with Hehn, and points to the Sanskrit *varâ*, which he was the first to associate with

the European words (*Griech. Wurzellexicon*, i. p. 60), and whic
guaranteed by the St Petersburg dictionary, at any rate in
adjectival sense of "salty." But now Otto Böhtlingk, wor
one of the two editors of this work, which is fundamental
Sanskrit etymology, states in a communication to the *Li*
Litteraturzeitung (1875, No. 643), that he regards this word
absolutely unfitted to be made the foundation for inferences
important to the history of culture, because in the mean
given it can only be traced in the twelfth century lexicogra
Hemacandra, whom we have already mentioned (*cf.* ab
p. 19).

Finally, the statement that the Indo-Europeans quite certa
practised agriculture before their dispersion, is based by Be
practically on the identity in meaning and form of Sanss. *urv*
and G. *ἄρουρα* "cornland" (Lat. *arvum*). The root *ar*, from wh
these words proceed, designated before the dispersion a proces
which the soil was brought into order. But this does not necessa
prove that the Indo-Europeans were acquainted with the plo
the place of which might be supplied by the hand or the branc
a tree, &c. Then when, after the dispersion, better method
agriculture became known, they were expressed in the Euro
languages by a verb *aroâ* (Lat. *arare*, G. *ἀρόω*, Goth. *ar*
derived from the root already mentioned, and in the As
languages by a totally different root, *karsh*, which originally mea
to draw ("draw furrows").

In demonstrations of this kind Comparative Philologists inter
in prehistoric questions, and, indeed, in the history of cultu
generally, appeared for a considerable time likely to die away. T
nearer the seventies drew to a close, the more entirely all available
forces in the field of Comparative Grammar were drawn off by th
struggle kindled in Germany particularly, by the discussion
novel questions, which though far-reaching, in the first instance
merely affected grammar. The increase of interest in the form
language naturally threw interest in the [illegible] of language i
the background. Further, the results whi[illegible]ly becam
appear from this conflict of opinions, the a[illegible] a
primitive character in the diversified vowels
compared with the more uniform one of
languages, the continual increase in the numb
the postulate that vocal laws know no exceptio
fresh fundamental sounds in the original tongu
two K-series or the syllabic nasals and liquids
of the law of "ablaut" or gradation even in non-
and other things, forced etymology, the ba
palæontology into fresh paths. The diction
Benfey, indeed even those by Fick and G. C
Greek Etymology), began to get antiquated
Here, as elsewhere, however, the work of destr
rapidly than that of construction, and even
the case of almost every Indo-European la

hy summaries of the etymological knowledge which can be
rded as certain according to modern views.
the year 1883, the present author in the first edition of this
began by turning once more to that study of primitive
re based on philology which had been lying fallow. On the
hand, he undertook to dig deeper as regarded the method of
department of knowledge; on the other, to call marked
ntion to the history of the metals amongst the Indo-Europeans,
so obtain a sketch of their primitive civilisation. In the
1886, in the next place the author presented one aspect of the
ry of Indo-European culture, "The Origins of Trade and
merce in Europe," in the first part of his *Forschungen zur
delsgeschichte und Warenkunde.**
nally, a vocabulary of those words which he regards as Indo-
pean, and as of importance for the history of culture, has
put together by Max Müller in his *Biographies of Words
Earliest Aryan Civilisation*, pp. 128–198), London, 1888.
is readily intelligible that the idea which had been developed
in Indo-Germanic limits, of penetrating to the primeval period
elated groups of peoples by means of Comparative Philology,
found to be applied to the domain of other families
anguage, if only they could be shown to possess genea-
al unity. The Semitic languages particularly must have
peared *a priori* especially adapted for historico-linguistic
earch. The area of distribution of the Semitic peoples is
graphically more limited and more uniform than that of the
do-Europeans. Further, the Semitic languages, confined within
e limits of their strict triliteralism, have been less exposed to
olent changes of form and meaning. Primitive records such as
e Assyrian cuneiform inscriptions and the Bible, carry us back
the first historical beginnings of the Semitic race. Nevertheless,
was not until the year 1875 that an attempt was made, in a
lliant paper by A. v. Kremer, on Semitic culture-loans in the
mal and veg[illegible]kingdom (*Semitische Culturentlehnungen
den Pflan[illegible]Thierreiche, Ausland*, 1875, Nos. 1, 2, 4, 5),
recon[illegible]meval Semitic period by means of language.
[illegible]ne for the Indo-Europeans, Kremer tries to do
[illegible]ples: he endeavours to trace their evolution
[illegible]me, which he supposes to have been in central
[illegible]n peninsula, the southernmost point in Asia of
[illegible]by the Semites, and thus to draw a decided
cultivated plants and domesticated animals
[illegible] and those which were imported from abroad
with a proof that the Semites were acquainted
not with the palm or the ostrich, before their
[illegible]rmed. The conclusions which Kremer draws

collection of critical reviews of these two books is
Jahresbericht (vi. 192, *f.*).
separate treatise at Stuttgart, 1875; reviewed by
eraturzeitung, 1875, p. 379, *f.*

from these facts, as to the geographical situation of the original Semitic people, will demand our attention elsewhere.

Kremer then proceeds to determine the extent of the most ancient Semitic civilisation: "The provision, the viaticum, with which the original Semites started from their home, was but scanty. The most precious of domestic animals, the camel, they brought with them, and it was thanks to the endurance of this beast of burden alone that they succeeded in crossing such extensive and inhospitable stretches of country. The patient ass too, even then submitted his elastic back to the burden, for his name is the same in all Semitic dialects (Arab. *ḥimâr*, Hebr. *ḥămôr*), and means "the red." The original Semite was accompanied not only by the ass but by that trusty comrade and faithful help to shepherd and hunter, the dog. Goats and sheep were not unknown to him; but there was a complete absence of domestic birds, ducks, hens, geese; and the cat had not yet become habituated to domestic life. Amongst the animals which were absolutely unknown to the Semites, before the rise of dialects, are "especially the stork, pelican, buffalo, and monkey." Of cultivated plants the Semites, before the rise of dialects, knew barley, wheat, lentils, beans, onions, and leeks; though Kremer doubts whether the oldest tribes who roved "as nomads and hunters," understood how to cultivate them as early as the primeval period. Their cultivation is rather to be placed not earlier than the immigration of the Semites into the Mesopotamian plain. This, the low-ground of Babylon and Mesopotamia, was, according to Kremer, the first and oldest Semitic centre of civilisation, and dates from a time when the dialects of the Semitic peoples had not yet been differentiated. Here were evolved all or most of the terms common to the Semitic languages for grape, vineyard, fig, olive, almond, pomegranate, and other fruit-trees. It is further to be noted that Kremer regards the horse also as a tolerably late acquisition to Semitic civilisation (p. 5). Indeed, he says, the Hebrew and Aramaic names of the animal, *sûs*, point to the Indo-Germanic, Sans. *áçvas*, and the Arabic *faras* to the Persian (Hebr. *Pâras*) (?).

The researches begun by A. v. Kremer were continued, at any rate as far as regards the Semitic animal kingdom, in a very profound work, by Fritz Hommel, on *The Names of the Mammalia Amongst the Southern Semites* (*Die Namen der Säugetiere bei den südsemitischen Völkern*, Leipzig, 1879). According to him (cf. p. 405) the original Semitic mammal fauna consisted of the lion, leopard, wolf, fox, hyæna, bear, wild-cat, boar, wild-ox, wild-ass, stag, gazelle, wild-goat, hare, hedgehog, mountain-badger, mole, field-mouse; and of domestic animals—the horse, ass, camel, goat, sheep, cow, dog. Hommel, therefore, differs so far from Kremer's views as to include the horse in the list of animals domesticated by the original Semites. From Hebr. *pârâsh*, "horseman, rider" (denominative from a hypothetical *pârâsh*, "horse"), Arab. *fâris*, "driver of horses" (: Arab. **fâs*, "horse"), h[illegible]

that we must infer (*cf.* pp. 44–46) an original Semit. *parašu*, with the meaning of "war-horse." This would further agree with the military character of the original Semitic people, which follows from original Semitic words such as *saypu*, "sword;" *ḳaušaṭu*, "bow;" *rumḥu*, "lance;" *amatu*, "prisoner of war."

The student of language finds himself in a more difficult position with regard to another family of languages which owing to its close contact with Indo-Germanic districts and its intrusion into the limits of Europe (see above, p. 36) would be particularly interesting—that is, the Ural-Altaic (Turanian, &c.) For, on the one hand, science has not been able to establish satisfactorily the spread of this family to Southern and Eastern Asia; while, on the other hand, in the case even of those branches of the family which are undoubtedly closely akin to each other, the Finnic-Ugrian, Samoyedic, and Turko-Tataric, Comparative Philology is still too busy fixing and tabulating their individual grammars to have in any degree completed an original grammar and an original vocabulary of the whole family of languages.

More recently H. Winkler (*Ural-altaische Völker und Sprachen*, Berlin, 1884) has especially distinguished himself, both on the anthropological and on the linguistic side, in defining the boundaries of this family of languages, amongst which he believes he may venture to reckon Japanese. In any case, we have reason to be grateful that an attempt has been made by the aid of Comparative Philology to illumine at least some portions of this tremendous family of nations and languages and the prehistoric periods of their development. To begin with, the starting-point from which the attempt to penetrate to the prehistoric culture of the Finnic-Ugrians has been made is remarkable. An extraordinary number of Teutonic and Lithu-Slavonic loan-words is to be found in the West Finnic languages, in almost every department of human culture. A portion of them, especially of the Teutonic, go back to original forms which are more primitive than the forms transmitted to us in the oldest Norse and Gothic sources, and leave no doubt that the West Finns when they advanced from the neighbourhood of the Ural to the coasts of the White-Sea and of the Gulfs of Bothnia and Finland, must have been exposed for centuries to the civilising influence of their more advanced neighbours. Of these loan-words the Teutonic had early engaged the attention of men such as Rask, J. Grimm, Dietrich, and others, until at length they were put together and reviewed in a very thorough-going investigation by W. Thomsen, *On the Influence of the Teutonic Languages on the Lapponic and Finnic*, translated from the Danish into German by E. Sievers, Halle, 1870. Whereas, [illegible]wever, Thomsen in the work mentioned had in view rather the [illegible]matical significance of those loan-words for Germanic and [illegible] forms, than their significance for the history of culture [illegible]wever, pp. 114–127), the well-known Swedish philologist, [illegible]vist, 1875, published in Helsingfors, a book, *Terms of* [illegible]*n in the West Finnic Languages, a Contribution to the*

History of Finnic Civilisation in Ancient Times (*Die Culturwörter der westfinnischen Sprachen, ein Beitrag zu der ältesten Culturgeschichte der Finnen*), in which the vocabulary of the West Finnic languages is distributed into sections illustrating the history of culture; and the genuineness of the words is carefully investigated. Ahlqvist marks off all civilised ideas which are shown by their foreign garb to be borrowed, and collects together the genuine Finnic words, when he finds them guaranteed by the agreement of the East Finnic langnages (Ostiak, Wogul, Syrianic, Wotiak, Mordwinic, &c.), in order to reconstruct the original Finnic civilisation, and tries to give a picture of the amount of civilisation which the Finns brought with them when they migrated into the Baltic district.

"They supported themselves," he says, pp. 254–267, "principally on the spoils of the chase and of fishing. Their most important domesticated animal was the dog, but the horse and cow were not unknown to them, though they did not yet know how to make cheese or butter from the milk of the latter. With the sheep, the goat, and the pig, they made their first acquaintance here on the Baltic. Agriculture seems not to have been entirely unknown to them, but they only practised a nomad agriculture, without clearing the land; of grains they only knew barley, and of bulbs only the turnip. The dwelling of the family was a hut (*kota*), which consisted of small trees or poles placed conically against a tree-trunk, and was covered in winter with hides; another kind of dwelling was *sauna*, a hole excavated in the ground, and covered with a roof over the earth. The internal arrangements of such a dwelling were of the simplest possible description; there was a door-opening, a smoke-vent above, in the middle of the room a hearth of loose stones, but no flooring and no window; for the light fell either through the door or through the smoke-vent. Their clothing consisted exclusively of hides, the clothes were sewn with bone-needles by the house-wife; the men made boats, and also instruments for the chase and fishing. The only other craft which seems in ancient times to have been native amongst our forefathers was that of the smith, though it may be doubted in what stage the art of smithying was brought from the original home. As regards the making of stuffs, they seem to have made none, except perhaps felt; however, by means of a spindle, they managed to spin threads from the fibres of some kind of nettle. They made their first acquaintance with the sheep, and the art of preparing yarn and cloth from its wool, here (on the Baltic). On the other hand, they knew how to tan hides, and to tint the nettle threads or tanned hides for summer clothing with some simple colours. Towns the[y] were none. Family life seems to have been tolerably develo[ped] amongst our ancestors. The numerous designations which [are] in this department are, for the most part, genuine, and for th[e] part, common to all the Finnic languages. A sort of co[un]with the name *pitäjä* seems to have existed, at least amo[ng] of the Yemic peoples, as also an elective head of the com[mu]

commander-in-war. There were no judges, and no hereditary chiefs, and no kind of state organisation."

Ahlqvist finds that his account of the most ancient Finnic culture, which we have given in an extract, is confirmed by a comparison of the condition in which the East Finns are at the present day as regards civilisation—of the culture of the Woguls in particular, the author gives a detailed description. Further, the references to the loan-words in Hungarian as compared with those in Finnic is instructive, and shows that the Hungarians, when they immigrated into Europe at a later period from the southern districts of the Ural, displayed about the same deficiencies in civilisation as the Finns, when they made their appearance on the Baltic.

Finally, we have in the department of the Turko-Tataric languages, a work, similar to Ahlqvist's, by H. Vámbéry, *The Primitive Culture of the Turko-Tataric People, based on Linguistic Research, &c.*, Leipzig, 1879 (*Die primitive Cultur des Turko-Tatarischen Volkes auf Grund sprachlicher Forschungen, &c.*). This work, of which a small portion had already appeared in *Ausland*, in 1879, satisfactorily shows thus much, that the Turko-Tataric family of languages presents a field for research in language and culture, which, in many respects, promises to bear more fruit than do the Indo-Germanic and Semitic languages. The greater stability of the Turko-Tataric languages, which makes the Jakut on the Lena better able even at this day to understand the Turk of Anatolia than the Swiss understands the Transylvanian (p. 15), the transparency and perspicuity of the vocabulary as regards the etymological meaning of the words, above all the originality of its civilised words, which are the creation of the unaided genius of the language, and are only modified by a thin stream of Persian loan-words (p. 35), make it appear not too difficult to establish with a tolerable amount of certainty the stage of culture to which the original Turko-Tataric people had attained, when it was still in its conjectural home between the western spurs of the Altai and the Caspian (p. 14). Here, too, a means of correcting inferences about the culture of the whole family of peoples and languages in the most ancient times is forthcoming, and is provided by the Kirgish or Turkoman tribes which retained their original civilisation almost in its entirety before they were subjected to Russian influence (p. 34).

Unfortunately there is a lack of clearness about the picture given of the primitive Turko-Tataric culture in Vámbéry's book.

The author's account is traversed throughout, as by a red thread, with the resolve to show "that intellectual strength and power are, and may be, as much the property of the Ural-Altaic as of the Indo-German peoples; and that, on the other hand, the temporary influence of certain communities in the world of thought and culture is due, not to ethnic, but solely and exclusively to political, and occasionally also to geographical conditions" (p. 48), finds the best confirmation of his view in the extremely

intellectual and transparent etymologies of the words that form the Turko-Tataric vocabulary. The largest part of the work, therefore, is devoted to the creative power shown in language by "original, that is, Turkish," man, which in no way adds to our knowledge of the primitive Turko-Tataric period, *i.e.* the period which preceded the separation of the Turko-Tataric peoples. It is not to the point, to take an example, to show that *temir, timir*, "iron," originally meant "the firm, stout, strong," and to explain what "the primitive man of the Turko-Tataric race" understood by this formation: for the history of culture, the most important thing is to determine whether the word referred to stood for iron in the predialectic period, and whether, therefore, this metal was already known to the primeval Turko-Tataric period.

But even when Vámbéry really endeavours to establish positive results about the nature of primitive Turko-Tataric culture, he involves himself in the most remarkable contradictions (*cf.*, *e.g.*, sect. 5: 16, on the cat, p. 38; 215, on grain), so that Vámbéry's book, although it is indispensable as being the only attempt at linguistic research in the domain of Turko-Tataric culture, has but a limited value from the scientific point of view.

More recently, in an extensive work, the *Origin of the Magyars, an Ethnological Study* (*Der Ursprung der Magyaren, eine ethnologische Studie*, Leipzig, 1882), H. Vámbéry has endeavoured to utilise language and history to determine the original culture of the Magyars, which he regards as more closely related with the Turko-Tataric branch of the Ural-Altaic family of languages than with the Ugro-Finnic (*cf.* sect. 3, *Culturmomente*, pp. 261–391).

CHAPTER III.

HYPOTHETICAL DIVISIONS OF THE INDO-EUROPEANS, AND THEIR IMPORTANCE FOR THE HISTORY OF CULTURE; WITH AN APPENDIX ON LOAN-WORDS IN THE INDO-GERMANIC LANGUAGES.

In our first chapter we have already pointed out that no sooner was the Indo-Germanic family of languages discovered, than it was observed that within this family certain groups were formed by languages which either had shown greater tenacity in preserving old forms or had jointly created new forms. The matter received but passing attention, and no decisive conclusion was reached with regard to it. It was, therefore, much to be desired that this subject, important alike for the history of language and of nations, should receive its proper attention. It was by A. Schleicher that this task was undertaken. He published an imposing series of treatises, of which the first appeared in 1853 in the *Kieler Allgemeinen Monatschrift für Wissenschaft und Litteratur*, pp. 786, 787. (The first divisions of the original Indo-Germanic people.) We must begin, therefore, by endeavouring to obtain a picture of this investigator's views, and must devote our first attention to the geographical and ethnological theories which are at the bottom of Schleicher's grouping of the various peoples.

We have to notice first of all that Schleicher regards the differentiation of language as having begun as early as the primeval Indo-Germanic period. He describes this in his short paper entitled *The Darwinian Theory and the Science of Language* (*Die Darwinsche Theorie und Sprachwissenschaft*, 1863, p. 15), as follows: "After having been spoken for several generations, during which time the people speaking it probably increased and spread, it (the original language) gradually began to assume a different character in different portions of its area, so that finally two languages were evolved from it. It is possible that several languages may have been evolved, of which only two continued to live and develope further." What we have to notice here is that development of two (or more) varieties of speech from the

A. Jolly, *Über den Stammbaum der Indog. Sprachen* (*Zeitschrift f. Völker-. Sprache*., VIII. pp. 15–39 and 196–205), and B. Delbrück (*Einleitung das Sprachstudium Cap.*, VII.), and H. v. d. Ploriten, *Die Frage nach Landschaftsverhältnissen der Indog. Sprachen*, *Ausland*, 1883, No. 3.

single original language is conceived by Schleicher as being solely due to the tendency to differentiation inherent in the nature of speech, and that the necessity of assuming any local division between the original people is dispensed with. When, but not until, language had thus divided, the peoples also divided in a geographical sense. The prime causes of this are regarded by Schleicher as being "increase of population, the deforesting and clearing of the soil, deterioration of the climate, and the unhappy consequences which to the present day always follow in the train of a predatory mode of life." Then the varieties of the original language, being carried to distant lands in consequence of the dispersion of the peoples, diverged, by a process of gradual differentiation ("by the continued tendency to divergency of character" as Darwin expresses it), still further. To what extent in Schleicher's opinion linguistic differentiation in the various languages, varieties of speech, dialects, &c., was accompanied by migrations, lesions of geographical continuity, and so on cannot be determined with absolute certainty. Anyhow, according to Schleicher, one may conceive the differentiation of, say, the original Teutonic speech into its various forms as taking place in much the same way as has just been described as happening in the case of the original Indo-Germanic language (*cf.* "*Die deutsche Sprache*, p. 94, *f.*). In various places (*cf.*, *e.g.*, *Compendium*, p. 4) geographical contiguity is emphasised by Schleicher as connected with affinity of speech; he would not agree to place, as Böttner (*cf.* below) places, Italian, say, closer to the northern languages than to Greek. On the contrary, he groups together Teutonic and Lithu-Slavonic, Greek and Latin, Hindu and Persian.

The relative periods at which the various Indo-Germanic languages and peoples divided, Schleicher endeavours to determine by means of two fundamental principles, which he formulates as follows:

(1) "The further east an Indo-Germanic people dwells, the larger the amount of ancient forms which it has preserved; the further west, the smaller the amount, and the larger the amount of new formations it contains" (*Compendium*, p. 6), and

(2) "The further west a language (or people) has its abode, the earlier it parted from the original language (or people)" (*Kuhn's Ztschr. Monatschrift f. Wissenschaft u. Litteratur*, 1853, p. 787).

According to these principles therefore, the Slavo-Teutons began their wanderings first, then the Greco-Italians, and finally the Hindu-Persians. As regards Celtic, Schleicher finds himself in a critical position. The situation of this people, furthest westward of all, compels him to assume that it was the first to leave the original home. A more careful examination of Celtic, however, caused him, even in 1858 (*cf. Beiträge zur vergleichenden Sprachforschung*, i. p. 437), to rank it closer to Italian, whereby Schleicher's principles, as just quoted, were seriously infringed.

As is generally known, Schleicher has endeavoured to illustrate his views on the divisions of the original language by means

diagram; for this purpose he first employed the picture of a branching tree (fig. 1), and afterwards a system of simple lines (fig. 2). In either case the ramifying branches or the lines are intended to represent the tendency to linguistic differentiation working itself out in various directions, and do not imply anything as to the geographical aspect of the separation of the peoples. The expression "pedigree," which came, in the course of discussion, to be used of the theory held by Schleicher and his followers, appears for the first time on Schleicher's lips in the paper already mentioned, *The Darwinian Theory and the Science of Language*, and seems to have been borrowed from the terminology of the student of nature.

I take the liberty of producing both figures in the text in order to put the results of Schleicher's investigations before the reader

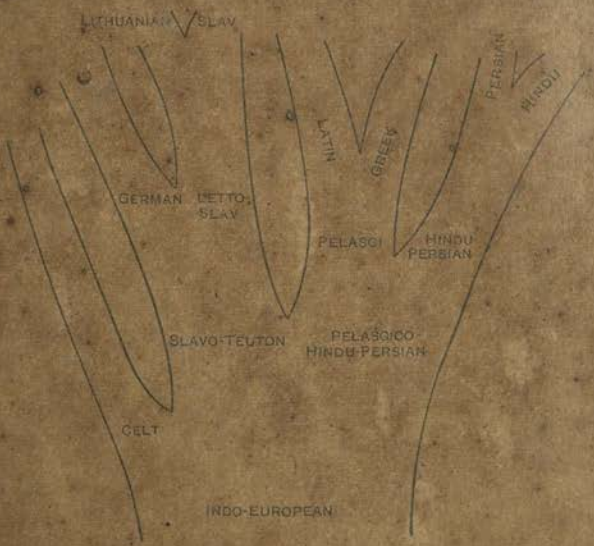

FIG. 1.—PEDIGREE OF 1853. (*Kieler Allg. Monatsschrift, &c.*, p. 787.)

in concreto. It is to be noted that in fig. 2* the different lengths of the lines are intended to indicate "the greater or less length of distance between the original language and the points of development here taken as final."

In the very same year (1853) that Schleicher published the new set forth above as to the divisions of the original language, ax Müller in his essay, *The Veda and the Zend-Avesta* (*Essays*, i. 60, *f.*), delivered an opinion on the subject of the parting of the o-Germanic peoples, which was opposed alike to Schleicher's to that of Bopp and Kuhn, described above (p. 14), and to he has remained faithful in his later writings also (*cf.* 1859,

found in the *Compendium*[1], p. 7, and at the end of *Die Darwinsche* d *Sprachwissenschaft*, as well as in the *Deutsche Sprache*.

A History of Ancient Sanskrit Literature, p. 12, *f.*, and 1862, *Lectures on the Science of Language*, p. 176, *f.*, and also 1872, *Über die Resultate der Sprachwissenschaft, Strassburger Antrittsvorlesung*, p. 18, *f.*, and 1888 *Biographies of Words*, p. 85, *ff.*, 137 *ff.*).

Here throughout he assumes a primeval separation of the Indo-Germanic people into a northern (north-western) and a southern division, the former comprising the modern European nations of Indo-Germanic origin, the latter the Persian and Hindu. This separation was due to "a world-wide wandering" of the European branch of the Indo-Germanic race in a north-west direction, the causes of which are hidden from us, but which casts a vivid streak of light on the original characteristics of the peoples that stayed

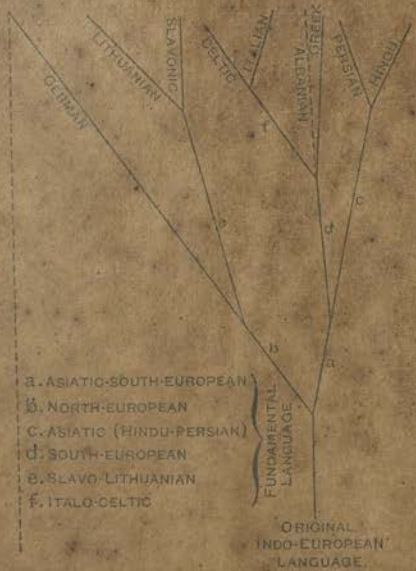

FIG. 2.—PEDIGREE OF 1861 (1869). (*Die deutsche Sprache*, p. 82.)

and the peoples that started. The principal rôle in the drama of history is ascribed to the Europeans, "they represent the Aryans in their historical character." And those who stayed behind?

"It requires great power of will, or a considerable degree of indolence, to resist the impulse of such national or rather nation-shaking movements. When all are going, few are willing to remain. But to allow one's friends to depart and then to begin one's journey—to strike out a path which, wherever it leads, can certainly never reunite us with those whose language we speak, and whose gods we honour—that is a road which only people of marked individuality and great self-confidence can tread. It was

the way taken by the southern branch of the Aryan family, by the Brahmin Aryans of India, and the Zoroastrians of Iran."*

As to further subdividing the European branch of the Indo-Germanic race into families of speech, Max Müller is very sceptical. Interesting, because allied to a view of affinities between the various Indo-Germanic peoples, which we shall have to deal with subsequently, is the explanation of the special points of agreement between, for example, the Teutonic and Slavonic languages, which Max Müller seeks in the hypothesis "that the forefathers of these races retained from the beginning certain peculiarities of dialect which existed as well before as after the scattering of the Aryan family" (*Lectures*, p. 178).

The idea of a fundamental European language thus started by Max Müller, was furnished with further support, in the way of arguments drawn from language and the history of culture, to which we shall have to return hereafter, by C. Lottner in 1858 in

FIG. 3.

The Position of the Italians in the Indo-Germanic Family (*Über die Stellung der Italer innerhalb des Indo-Europäischen Stammes*, *K. Z.*, vii. pp. 18–49 and 160–93). Lottner endeavours to subdivide the original European language still further, and in this attempt the most noteworthy thing is that he releases the Latins for the first time from close connection with the Greeks. His view of the closer relations of the European languages to each other, expressed in the fashion of Schleicher's pedigree, would be as in fig. 3 (*cf.* on this point Lottner, *Celtisch-Italisch*, *Beiträge zur vergleichenden Sprachforschung*, ii. p. 321, *f.*).

* This picture of a conscious separation of the Indo-Germanic peoples has been already justly blamed by W. D. Whitney (*Oriental and Linguistic Studies*, New York, 1873, *p.* 95, *f.*): "Had not our author, when he wrote this paragraph, half unconsciously in mind the famous and striking picture of Kaulbach at Berlin, representing the scattering of the human race from the foot of the ruined tower of Babylon; where we see each separate nationality, with the impress of its after character and fortunes already stamped on every limb and feature, taking up its line of march toward the quarter of the earth which it is destined to occupy."

The theory of an original division of the Indo-Europeans into two halves, a European and an Asiatic, found subsequently its most ardent defender in A. Fick: the view of the divisions of the Indo-germanic peoples, which is the foundation of his Comparative Lexicon of the Indo-Germanic languages, is conveyed by him in the following diagram, the geographical and ethnological grounds for which we shall learn hereafter (*cf. Wörterbuch*, 1051):

Thus, in spite of the labour expended on them, these questions had received no final solution. There were only two points in which all enquirers were agreed; in assuming a closer affinity on the one hand between Hindu and Persian, on the other between Slavonic and Lithuanian. The difficulties began the moment it was undertaken to draw a sharp distinction between the languages of Europe and Asia. As regards the north, the question was raised whether the Lithu-Slavonic languages were to be placed nearer to their eastern neighbours, the Hindu-Persians, or to their western, Teutonic neighbours. As regards the south, opinions were divided on the subject of Greek. Whereas A. Schleicher, F. Justi (*Hist. Taschenbuch herausg. V. F. V. Raumer*, iv. Folge, iii. Jahrg. p. 316), and others, regarded the whole South European division as more closely connected with the Hindu-Persians than with the North Europeans: H. Grassmann (1863, *Z. Z.*, xii. p. 119), C. Pauli (*Über die Benennung der Körpertheile bei den Indog.* 1867, p. 1), W. Sonne * (1869, *Zur ethnologischen Stellung der Griechen*. Wismar,

* The way in which Sonne (*ib.* p. 6) conceives the separation of the Indo-Europeans to have begun and been carried out is interesting:—"That the divisions of the Indo-Germanic peoples only took place gradually and by degrees has often been remarked, and it is certain that for instance the Teutons divided into Germans and Scandinavians; the latter into Swedes and Danes only very gradually. But differentiation without migration, and within the limits of one and the same area, is the silent work of time. Things may have been different when our original people first divided.

"The original people, numerous as they were, for the development of their language indicates that they lived together for at least a thousand years, must have covered large tracts of central Asia, in nomad fashion, not only south but also north of the Oxus. In historical times, however, the Turanians alone are native to the latter lands, and as in later times Attila and Dschingiskhan swept over the earth, so may it have been a violent irruption of Turanians which drove the northern half of our original people westward, the first stage

Programm), F. Spiegel (*Eranische Alterthumskunde*, p. 443), and others, maintained a closer connection, especially in the case of Greek, with the other languages. Within the limits of Europe, Celtic in especial caused perplexity. It had to be classed sometimes with the northern division, sometimes with the southern. In 1861 H. Ebel, next to Zeuss the greatest Celtic scholar in Germany, summed up his investigations (*Beiträge zur vergl. Sprachforschung*, ii. pp. 177–94) as to the place of Celtic in the following words:—"In fine, then, we have found that there exist quite as important analogies between it and German (and, to a secondary degree, Lithu-Slavonic) as between it and Italian (and Greek): it can, therefore, hardly be denied that it occupies a sort of intermediate position; though it looks as though it shared in common with German just those points which are particularly the manifestations of the intellectual life and the internal character of the language." How Ebel conceived this intermediate position of the Celtic languages, to the hypothesis of which he clung to his death (*cf. Zeitschrift f. Völkerpsychologie und Sprachw.*, viii. p. 473), to have arisen as a matter of history, is not explained.

However opinions might differ in detail on the question which of the Indo-Germanic languages were more closely connected together than the others, the general conviction was firmly established that the special agreements between any two or more languages were to be explained in the same way, on a small scale, as the affinities of the Indo-Germanic languages on a large scale. There was nothing stranger in the idea of a primitive European, Græco-Italian, Teutonic people, than in the conception of a primitive Indo-Germanic people itself.

Ought it not then also to be possible to illumine the culture of these intermediate stages by means of the same comparative philology by which the civilisation of the primitive period had been inferred; and ought it not to be possible in course of time to obtain an account of a whole series of stages of prehistoric culture?

The question suggested itself all the more readily, because Schleicher's principle that grammatical structure should alone be employed as the criterion of the closer affinity of two or more

of their flight being across the Volga into the Pontic steppes. In the west, too, it is possible to live comfortably, said the Russian, there let us build our huts—and westward the hordes betook themselves, the Danube showed them the way; Germany, Gaul, and finally, in a southern direction over the Alps, Italy was reached. These hordes then divided into two halves, of which the western further individualised themselves as Celts and Italians, the eastern as Teutons and Slavs.

"So much for one half, the northern half, of our original people; the other, remaining behind, established itself south of the Oxus, and although, like the northern half, hemmed in by the Turanians, it manifested considerable power of expansion eastwards and westwards. From Bactria, the native land of these Aryans in particular, eastwards, the Punjaub and the valley of the Ganges was brought into occupation, and India formed an Aryan world in itself; westwards, Media, Persia, Armenia, Phrygia were occupied; and finally, Thrace, Macedonia, and Hellas were brought under the same influence. Thus we get two important parallels: the southern (oriental) from the Adriatic to the Ganges; the northern (occidental) from the Volga to the Atlantic."

languages had been given up since Lottner and Ebel, and the vocabulary was being more and more used in the investigation of the divisions of the Indo-Germanic peoples."

I believe, however, that in the present stage of the science it is not necessary for me to give a detailed account of these attempts to employ Comparative Philology for discovering the state of culture to which these hypothetical divisions of the Indo-Europeans had attained. I shall not do more than mention the works which bear on the question, and briefly characterise them. As they are in the main based on the assumption that the original people began by dividing into two halves, a European and an Asiatic, our review also will most suitably follow the same lines.

A. The Primitive European Period.

Here we have to note C. Lottner, *K. Z.*, vii. 18, *ff.*, and especially A. Fick, *Die ehemalige Spracheinheit des Indogermanen Europas*, Göttingen, 1873 (*cf.* above, p. 37). Both scholars insist upon the number of names of trees common to the European languages, and further see the most important difference between the primitive European and primitive Indo-European periods in the transition of the European members "from settled cattle-breeders to cultivators of the soil." "The Europeans, on the evidence of language, had, at the time when they parted north and south, from settled cattle-breeders become cultivators of the soil, whose subsistence was in the first place derived from the produce of the soil, and only in a secondary degree depended on their herds" (Fick, p. 289).

The Europeans were the first to make the acquaintance of a great (salt) sea. *Cf.* Lat. *sal* and *mare* with their cognates.

(a) *The Græco-Italians.*

The assumption of a closer connection between the two classical languages, in whatever way this connection is supposed to have originated as a matter of history, may be regarded as an inheritance bequeathed to Comparative Philology from earlier times. At any rate, the mere philological examination of the vocabulary of Greek and Latin was adapted to lead, at an early period, to observations as to the history of culture.

Thus B. G. Niebuhr, who considered Latin to be a mixed language, consisting of Greek and foreign (Pelasgian) elements, remarked (*cf. Römische Geschichte*, i.[2] p. 93) :—"It cannot possibly be a mere accident that the words for house, field, a plough, to plough, wine, olive, milk, cow, pig, sheep, apple, &c., which have to do with agriculture and the milder side of life, should agree in Greek and Latin, whereas all that belongs to war or the chase are uniformly designated by non-Greek words."

In connection with this remark of Niebuhr's, K. O. Müller, *Etrusker*, i. (1828), p. 16, finds in it a proof that a rustic, pastoral

people related to the Greeks (the Siculi) must have been subjugated by a non-Greek but more warlike people (the Aborigines), just as in the case of a similar mixture in English, the old names for the common objects of life persisted in the country, while they received French names from the Normans of the ruling classes.

The first to reconstruct a Græco-Italian period of culture by means of the new Comparative Philology, and to contrast it with the Indo-Germanic period, was Th. Mommsen, as early as the first edition of his *History of Rome* (1854), pp. 12–21. The most important advance in culture made by the Græco-Italians, according to Mommsen, was the transition from the nomad shepherd-life of the primeval period, in which only the wild kinds of grain were known, to the condition of a people cultivating grain and even the vine.

In the later editions of his *History of Rome*, Mommsen does, indeed, approximate more and more to the view that agreement as to the words quoted as a rule extends considerably beyond the limits of Greece and Italy, but from this he subsequently (cf. 3rd ed. i. p. 20, note) merely draws the inference that there can have been no time when the Greeks of every Greek district lived solely by cattle-breeding.

Further we should here mention a work by B. Kneisel, *Ueber den Kulturzustand der Indog. Völker vor ihrer Trennung* ("On the Culture of the Indo-Europeans before their Dispersion") *mit besonderer Rücksicht auf die Græco-Italiker*, Programm, Naumburg, 1867, and the collection of a Græco-Italian vocabulary in A. Fick's *Vergleichendes Wörterbuch*, in Lottner's paper already quoted, and J. Schmidt's *Die Verwandtschaftsverhältnisse der Indog. Sprachen*, Weimar, 1872.

Owing above all to the weighty voice of Th. Mommsen, the belief in the closer connection of the Greeks and Italians has taken deeper and deeper root amongst historians and ethnologists. Here I will only refer to the well-known works of Ernst Curtius, Max. Duncker, Friederich Müller,* and Heinrich Kiepert, and

* In his *Allgemeinen Ethnographie*, 1873, Fr. Müller sketches an Indo-germanic pedigree of his own, which if drawn after the manner of Schleicher would be as follows:—

FIG. 4.

others. V. Hehn and W. Helbig (*Die Italiker in der Poebene, Beiträge zur altitalischen Kultur- und Kunstgeschichte*, i. 1879) also are convinced that the two classical peoples are more closely related to each other than to the rest of the Indo-Europeans. However, it happens not unfrequently that owing to their views as to the primitive culture of peoples, who in their historical abodes were nomads, both investigators lay weight on those series of civilised words in both classical languages, which show little or no agreement in their etymology (agricultural implements, fishing, metallurgy, &c.).

As to this view, which is the basis of a book which we subsequently shall have to deal with more fully, B. W. Leist's *Graco-Italische Rechtsgeschichte*, Jena, 1884 (*cf.*, *e.g.*, p. 8), Comparative Philology has become very sceptical as to the close connection of the Greeks and Italians.* Ascoli still adheres to it, *Sprachwissenschaftliche Briefe*, Germ., Leipzig, 1887.

The theory of a Græco-Italian period, if logically carried out, would, on the pedigree principle, lead to a primitive Italian and a primitive Greek period, the description of which would have to be based on the common vocabulary of the Italian dialects (Umbrian, Oscan, Latin, &c.) and Greek dialects (Doric, Aeolic, and Ionic-Attic). But the scantiness of the materials is hardly inviting for the task. The original Italian words are to be found collected in F. Bücheler, *Lexicon Italicum*, Programm. Bonn. 1881.

An adequate statement of the kinship of the Greek dialects, which fall into two great groups, the *ā*-dialects (Aelo-Doric, *cf.*, *e.g.*, δᾶμος) and the *ē*-dialects (Ionic-Attic, *cf.*, *e.g.*, δῆμος), is as yet, owing to the scarcity of ancient material, not possible. A beginning has been made by Collitz, *Die Verwandtschaftsverhältnisse der Griech. Dialekte*, 1885. As regards Italy, the closer connection of the Umbrian and Samnite dialects as compared with Latin has never been open to doubt.

(*b*) *The Lithu-Slavo-Teutons.*

Next to the Græco-Italian, the group whose existence in Europe has been most frequently asserted is the Lithu-Slavo-Teutonic or Slavo-German, as we have already seen. Put forward by men like Bopp, K. Zeuss, and J. Grimm (*cf.* above, pp. 13, 14), and supported with further arguments by Schleicher, this assumption of the closer affinity of the northern races of Europe to each other has been regarded down to the latest times by most scholars as an established fact. A lexicon of the vocabulary of the Slavo-German group is given again by A. Fick, in his *Comparative Dictionary*, ii.[3] pp. 289–500. The words and roots which as yet have been traced only in the North European languages are to be found collected in J. Schmidt, *Verwandschaftverhältnisse*, &c., pp. 36–41.

* *Cf.*, *e.g.*, Delbrück's remark (*Einleitung in das Sprachstudium*, 1880, p. 137): "That for the present *historians* will do well to abstain from employing such groups of languages and peoples as the Græco-Italian, Slavo-German, &c." *Cf.* also 2nd ed., 1884, p. 140.

The stock of civilisation possessed by this Slavo-German group was first set forth in a connected manner, if we put aside the the scattered remarks of J. Grimm and others, by E. Förstemann in his *History of the German Family of Languages* (*Geschichte des deutschen Sprachstammes*, 1874, i. p. 239, *ff.*; *cf.* also *Germania*, xv. p. 385, *ff.*).

He believes that in many parts of the vocabulary of words important for the history of culture (expressions for the conception of the community, for gold and silver, for rye, wheat and beer, for names of fishes, the smith, harvest, the numeral "thousand," &c.) it is possible to detect a not unimportant advance in civilisation made by the primitive Slavo-Germans, as contrasted with the primeval Indo-Europeans.

In contrast to this advance of civilisation in numerous departments, "man from this point of view, declines in several respects from a certain idyllic condition mirrored in the vocabulary of earlier periods" (p. 281). At any rate, we cannot help being struck by the terminology which now appears for the darker sides of life, disease, want, trouble, disgrace, treachery, hate, lies, &c. Nor are immoral connections, which were not to be traced in the primeval Indo-Germanic period, now wanting.

This account, which is frequently based on an extremely unsafe philological foundation, is followed by W. Arnold in his work *Deutsche Urzeit*, 1870–80; *cf.* p. 21, *f.*

After Förstemann, the unity of the Slavo-Teutonic group has been treated of, from the point of view of the history of culture, by R. Hassencamp in his paper *Ueber den Zusammenhang des lettoslavischen und Germanischen Sprachstammes*, 1876, p. 54, *ff.* From a purely grammatical point of view, indeed with regard solely to declension, A. Leskien, finally, in *Die Deklination im Slavisch-litauischen und Germanischen*, Leipzig, 1876, has discussed the question of the relation of the languages and peoples referred to, but without reaching any other than negative results.

(c) *The Original Teutons.*

A. Schleicher in his work *Die Deutsche Sprache*[2], p. 94, has given the following pedigree of the Teutonic tongues (fig. 5).

In essential agreement with this are the three stages of development in Teutonic which Förstemann distinguishes (*cf. K. Z.*, xviii. 161, *ff.*), viz., original Old German (all Teutonic languages together), original Middle German (the Teutonic languages minus Gothic), original New German (the Teutonic languages after the departure of the Norse branch).

On the other hand, another mode of grouping the Teutonic languages was first proposed by K. Müllenhoff, and carried out by W. Scherer (*Zur Geschichte der Deutschen Sprache*, 1868–78) and H. Zimmer (*Ost- und West-germanisch*, *Haupts Zeitschrift*, xix. p. 393, *ff.*), according to which the original Teutonic language separated into a West and an East Teutonic group, the latter of which again divided into Gothic and Norse, the former into High German

and Low German, or, better, into Frisian-Saxon (Anglo-Saxon) and Franco-Upper-Saxon (Bavarian, Alemannic). However, the assumption of a closer connection between Gothic and Norse, has, in spite of certain important coincidences between the two languages, not yet obtained the approval of all competent enquirers. *Cf.* A. Noreen, *Altnordische Grammatik*, i., Halle, 1884, Introduction.

As regards the history of culture, Förstemann (*Germania*, xvi. 415, and *Geschichte des deutschen Sprachstammes*, i. 399, *ff.*) endeavours to reconstruct the vocabulary of original Teutonic, and thereby to establish the advances in culture which, according to him, the original Teutons had made upon the Slavo-Teutons; apart from particulars, an absolutely new world appears in the Teutonic languages owing to the intimate contrast of the Teutonic peoples with the sea. This is shown not only by such expressions as sea, gulf, wave, cliff, strand, island, names of the inhabitants of the North Sea, &c., but also by a developed terminology, common to all the Teutons, of the arts of shipbuilding and steering.

Cf. further the introduction to F. Kluge's *Etymologischem Wörterbuch der deutschen Sprache*, Strassburg, 1884, 4th ed., 1888, and W. Arnold, *Deutsche Urzeit*, p. 41, *ff.*

Of lesser linguistic works on the primitive Teutonic period, I may refer to an excellent *Programm des Johanneums zu Hamburg*, 1880; *Sprachgeschichtliche Nachweise zur Kunde des Germanischen Altertums*, by E. Rautenberg, the object of which is to draw conclusions from the history of the Teutonic languages as to the oldest form of the Teutonic dwelling-house.

FIG. 5.—a, Gothic; b, German; c, Norse; d, High German; e, Low German in the wider sense; f, Frisian; g, Saxon; h, Anglo-Saxon, later English; i, Old Saxon; k, Platt-deutsch (Modern Low German); l, Dutch.

The vocabulary of the Teutonic group of languages is collected in A. Fick's *Comparative Dictionary*, iii.[3]

(d) *The Original Slavs.*

We leave on one side the Lithu-Slavonic group of languages, which, except for the Lithu-Slavonic vocabulary of A. Fick (*Vergleichendes Wörterbuch*, ii., not to be used without A. Brückner's

Die Slavischen Fremwörter im Lettnischen, Weimar, (1877), have not been made the subject of important investigations bearing on our purpose (*cf.* only *Russland, Polen und Livland bis ins 17 Jahr.*, by Th. Schiemann, Berlin, 1884, pp. 8–12), and proceed at once to the primitive Slavonic period.

The first writer to endeavour to apply the method of Comparative Philology to the primitive history of Slavonic was J. E. Wocel, in his work *Pravěk země české v Praze*, 1868, pp. 245–60 (an extract from it in the *Sitzungsberichten der k. böhm. Gesellschaft der Wissenschaften*, 1864, H. 2), and also in *The Importance of Stone and Bronze Antiquities for the Primitive History of the Slavs* (*Die Bedeutung der Stein- und Bronzealtertümer für die Urgeschichte der Slaven*, Prag. 1869, p. 39, *f.*; *cf. Ausland*, 1870, p. 541). In the latter treatise Wocel wishes to show that: "The Slavs did not dwell as autochthones in the north of Germany, on the Elbe, Moldau, Sale, Spree, and south of the Danube, in the Bronze Age, but immigrated into those districts some centuries after Christ." For this purpose he produces a series of Panslavonic terms for objects such as iron, and implements made of this metal, as to which he assumes that they cannot possibly have been known to a people in the Bronze Age. All these words therefore must have been formed at a time when the Slavonic peoples were still living together within the bounds of a comparatively narrow territory, according to Wocel between the Vistula and the Dnieper.

Now, as in the whole district east of the Carpathians and the Oder, as far as the Dnieper, no weapons or implements of bronze have been found, Wocel reaches the further conclusion that the Slavonic peoples never went through a Bronze Age at all, but passed straight to the working of iron—thanks to the influence of the Greek civilisation of the Black Sea—at a time when the Bronze Age still prevailed amongst the peoples on this side of the Carpathians.

Since Wocel, Gregor Krek has endeavoured to investigate the primitive Slavonic period "by means of linguistic Archæology" in his *Introduction to the History of Slavonic Literature* (*Einleitung in die slavische Litteraturgeschichte*, Graz, 1874, pp. 33–55). He has a pretty high opinion of primitive Slavonic civilisation, and in the second edition of his work (Graz, 1887, pp. 208–11), which contains far more than twice as much as the first, he remains faithful to this view. As in the course of our investigations we shall have to return sometimes to agree, more often to disagree with Krek's work, we forbear to say more of it now. We may, however, here call attention to the wealth of linguistic and historic material lavished on this book by the author's extensive learning. In particular, all Slavonic literature bearing on the question is indicated.

The relation of the Slavonic languages to each other is usually explained from the standpoint of the pedigree doctrine by a division of original Slavonic into a West Slavonic (Polish, Polabish, Čech, Sorbic) and a North-Eastern-Southern group (Russian,

Slavonic, Bulgarian, Servian, Kroat). *Cf.* on this, Krek, *ib.* p. 211; *f.* A vocabulary of words common to the Slavonic languages will be found in Frank Miklosich's *Etymologischen Wörterbuch der Slavischen Sprachen*, Vienna, 1886.

(c) *The Celts.*

The fact that these languages have only just begun to be studied, not less than the difficulties they present in the question as to the closer affinities of the Indo-Germanic languages, permits us to record but few attempts to employ the Celtic vocabulary for purposes of the history of culture in the sense meant by us. Indeed, no attempt has as yet been made to frame a vocabulary common to the two great branches of the Celtic group, Gaelic (in Ireland and Scotland) and Breton (Welsh, Cornish, and Aremoric), and to base thereon an account of a primitive Celtic period of culture.*

In the matter of etymology also little has as yet been done of a comprehensive nature. *Cf.* the Celtic etymologies by E. Windisch in G. Curtius's "*Principles of Greek Etymology*," 4th and 5th editions.

We have here to mention, as of importance, the dissertation, already cited, by H. Ebel, *The Position of Celtic* (*Die Stellung des Celtischen; Beiträge*, ii. p. 157), which is valuable because it contains a careful comparison of the Celtic vocabulary with the other European languages. It is unnecessary to say that Ebel's figures (*cf.* p. 179), according to which "the ratio of Celtic to German and to Latin is about equal," are now, twenty years after, no longer valid for Celtic. Next we have to refer to Adolf Baumeister's *Celtic Letters* (*Celtische Briefe*, edited by O. Keller, Strasburg, 1874), written in a popular but stimulating style, but not to be used without E. Windisch's searching review (*Beiträge*, viii. 422; *f.*).

The best information about the history and transmission of these languages, whose closer connection with the Italian than any other languages seems to grow daily more probable (*cf.* below p. 72), is given by E. Windisch in the article on Celtic languages in *Ersch and Gruber's Encyclopædia*. It is manifest that the views of those enquirers who were seen by us to maintain the closer connection of one or more of the European languages with the East, might have resulted in similar chapters in the history of culture, and that the assumption of a Hindu-Perso-Slavonic group of peoples or a Hindu-Perso-Greek, a Hindu-Perso-Pelasgian

* Still, Eduard Lhuyd in his *Archæologia Britannica* put together, as early as 1707 A.D., a vocabulary of the words common to the Celtic languages. In this work, an extremely remarkable work for its time, there is also given an *Appendix voces aliquot quotidianas et maxime antiquas nonnullis Europæ linguis complectens*, which deals with words important in most cases for the history of culture. The same book contains, Tit. viii., *A British Etymologicon, or the Welsh collated with the Greek and Latin, and some other European Languages* (by David Parry), &c.

group, would, considered simply in itself, stand on no different footing from that of a primitive European or a primitive Graeco-Italian period. As, however, even tolerably thorough investigations in this direction—*en passant* L. Geiger, for instance, in his *Evolution of Mankind* (*Zur Entwicklungsgeschichte der Menschheit*, p. 125, *f.*), endeavours on the strength of considerations drawn from the history of culture to establish a Hindu-Perso-Hellenic period—are not forthcoming (though the special points in which the vocabulary of the European languages agrees with the Eastern languages are collected in J. Schmidt's vocabularies, *Verwandtschaftsverhältnisse der Indog. Sprachen*), we may proceed at once to the Hindu-Persian group (II.) as contrasted with the European group already dealt with under (I.).

II. The Hindu-Persian (Aryan) Group of Languages.

Precisely because the close connection of the Hindus and Persians (Iranians), both as regards ethnography and language (*cf.* J. Muir, *Original Sanskrit Texts*, ii.² p. 287, *f.*, *Reasons for Supposing the Indians and Persians in Particular to have a Common Origin*), has never been subjected to serious doubt, but slight attempts have been made to prove this connection by means of considerations drawn from the history of culture. It was only to the points in which the religions of the two peoples touched that attention was paid in earlier times.

The first and only scholar who has made even a tolerably thorough attempt to ascertain the amount of civilisation possessed by the original Hindu-Persians, is Fr. Spiegel in his *Iranian Antiquities* (*Eränische Alterthumskunde*, B. i., 1871, p. 423, *f.*). The Hindu-Persian period, the existence of which finds not its weakest argument in the name of Aryan, borne by Hindus and Persians alike, is considered by Spiegel to have made an advance in the domestication of the camel and the ass, in the art of war, and in the development of the numerals (thousand), &c.

The agreement shown by these languages, however, is far more important as regards the history of religion, than any other point. Thus Sanskrit and Persian agree in their terms for priest, sacrifice and song of praise, God and Lord, the honoured, sacred and divine plant Soma, and of a very considerable number of divine and mythical beings (*cf.* Abh. iv. Kap. xiii.).

Besides these glaring instances of agreement, it had early been remarked that certain important words, identical as regards form amongst the Hindus and Iranians, diverged in meaning, in as much as one or other people turned them *in malam partem*. Thus the word which in all Indo-Germanic languages and also in Sanskrit stood for the supreme sky-god, *déva*, was employed in Zend to designate evil powers. Thus Indra, whose name in the Rigveda is the designation of the greatest and the most powerful of the gods, is ranked in the Avesta amongst the powers of evil. It was these and similar facts which led to the opinion, maintained

especially by Haug and Lassen, that these differences of meaning pointed to an ancient religious and political schism in the original Hindu-Persian people, which offered an explanation for the separation of the Hindus and Iranians. But this combination has proved unsatisfactory (*cf.* Justi in the *Göttingischen Gel. Anzeigen*, 1866, p. 1446, *f.*), and Spiegel (*op. cit.* p. 444) insists that these contrasts "are due to fortuitous causes, and that the continuous advance of one or other people, after their separation, is competent to explain the altered position of the old deities." The idea of a religious schism is entirely abandoned by James Darmesteter in *The Zend-Avesta*, 1880, p. 406, *f.*, as, indeed, generally by all modern Zend and Sanskrit scholars.

As part of the capital of the original Hindu-Persian period, Fr. Spiegel counts finally a series of geographical names, names of rivers and places, although he is not of opinion that they always indicated a definite spot in the common original home.

A collection of the common Hindu-Persian vocabulary again is given by A. Fick in his *Vergleichendes Wörterbuch*, i. (*cf.* Windisch, *K. Z.*, xxv., p. 386). F. Justi's *Handbook to Zend* (*Handbuch der Zendsprache*), and W. Geiger's *East Iranian Culture in Antiquity* (*Ostiranische Cultur im Alterthum*, 1882), should be mentioned here, as in both books there are numerous excursuses into Hindu territory.

Kingship in the Asiatic branch of the Indo-Germanic race is discussed by F. Spiegel (*Deutsche Revue*, edited by R. Fleischer, 1881, *H. X.*, p. 124, *f.*), and Soma (*haoma*), by R. Roth, *Z. d. M. G.*, xxxv., pp. 68–92. *Cf.* Max Müller, *Biographies*, p. 222, *f.*

To this literature there has been added in modern times:—

W. Geiger, *La civilisation des Aryas*, (1) *les noms géographiques dans l'Avesta et dans le Rigveda*, (2) *climat et produits des pays Aryens*, 1884, an exhaustive work by Fr. Spiegel's *Die Arische Periode und ihre Zustände*, Leipzig, 1887. To both works we shall hereafter make frequent reference.

Finally may be mentioned P. v. Bradke, *Einige Bemerkungen über die arische Urzeit. Festgruss an O. v. Böhtlingk*, Stuttgart, 1888, pp. 4–9.

The erection of groups of people, prehistoric indeed but subsequent in time to the primeval Indo-Germanic period, was based, as we have seen above, on the idea that the points of agreement peculiar to two or more languages could only be explained on the assumption of an original language as their common basis. As a matter of fact this view had the field to itself, until in the year 1872, one of the most discerning and learned of modern students of language, J. Schmidt, proposed, first in a lecture to the Leipzig Association of Philologists (*cf.* their *Verhandl.*, p. 220, *f.*), and then in a special dissertation, already quoted by us, *The Kinship of the Indo-Germanic Languages* (*Die Verwandtschaftsverhältnisse der Indog. Sprachen*; *cf.* also *Zur Geschichte des Indog. Vocalismus*, ii. p. 183, *f.*), a new hypothesis, which is so important for our subject that we must devote the rest of this chapter to giving an account of it.

The difference between J. Schmidt and his predecessors is that he does not confine his researches to a particular group of Indo-Germanic languages, but simultaneously includes in his survey all cases of special agreement throughout the whole region of the Indo-Germanic family of speech. It is significant to begin with, that on the pedigree theory it is impossible that all the linguistic arguments, on the strength of which the groups of languages detailed by us have been set up, can be valid. If the Slavo-Lithuanian languages are really connected with the Hindu-Persian by a closer tie, then the idea of a European group of languages is so far erroneous; or if we decide in favour of a closer relation between Greek and the Hindu-Persian languages, in favour, that is, of a Hindu-Perso-Hellenic period, then the coincidences between Greek and Latin must be either casual or illusory. The great advantage of Schmidt's theory to begin with is that it makes it possible to account simultaneously for all the facts of language.

It may be put together somewhat as follows:—At various points in the area of the Indo-Germanic languages, while that area was yet geographically one, there appeared in the remotest primeval times, certain phonetic changes, or new formations generally—the first beginnings of incipient dialects—which spread in undulations as one might say, from their starting-point, sometimes more, sometime less extensively, over the neighbouring districts. Thus, in what previously was a homogeneous linguistic mass, differentiations were gradually set up, and between these differentiations relations forming the prototypes of subsequent languages. To proceed at once to concrete examples, at one point in the area of Indo-Germanic speech a phonetic tendency set in, to transform the guttural tenuis *k* into a sibilant. This phonetic tendency extended over the district inhabited by the forefathers of the Hindu-Persians, the Armenians, and the Slavo-Lithuanians, so that now their languages—Sans. *çatá*, Iran. *sata*, O.S. *sŭto*, Lith. *szimtas*—apparently form an exclusive group in contrast with G. ἑκατόν, O.I. *çá*, Lat. *centum*, Goth. *hund* (= *kunt*). At perhaps the same time, however, at a different point in the linguistic area, a beginning was made of changing the *bh* of the case suffixes *-bhi*, *-bhis*, *-bhya(m)s* into *m*, a phonetic change which only spread over the territory of the Slavo-Teutonic tribes. Goth. *vulfa-m*, O.S. *vlŭko-mŭ*, Lith. *wilkamus*, corresponds to G. εὐνῆ-φιν, O.I. *fera-ib*, Lat. *hosti-bus*. At a third point a suffix-like *n*, which perhaps occurred sporadically elsewhere, began to be used for the formation of the passive voice and deponents. Celtic and Latin were affected by this; *cf.* O.I. *nom berar* = Lat. *fero-r*, &c. Other linguistic phenomena again, such as the feminine use of stems in *-a* (*o*), usually masculine (ἡ ὁδός, *fagus*), were limited exclusively to the Græco-Italian region. Finally, the languages of all the European tribes (and of one Asiatic, the Armenians) are embraced by the change of the *a*, which the Persian and Hindu tongues have apparently preserved faithfully, into *e* in many words—Lat. *fero*, G. φέρω, I. *berim*, O.H.G. *beru*, O.S. *bera*, Armen. *berem*: Hind. *bhar*. *Cf.* J. Schmidt, *What*

does the c of the European Languages Prove for the Existence of an Original European Language? (*Was beweist das c der Europäischen Sprachen für die Annahme einer einheitlichen Europäischen Grundsprache?* K. Z., xxiii. p. 273.) If a picture is needed of the way in which these partial coincidences were distributed over the Indo-Germanic region, the following diagram may be found useful:—

FIG. 6.

In words, however, the diagram amounts to this:—Just as it is impossible in the diagram to pass out of any one of the spaces enclosed by the five lines drawn therein, without at once falling into a space surrounded by another of those lines, so in the area of the Indo-Germanic languages it is impossible to refer a particular group to an original language peculiar to that group, and so detach it from the whole, because this would necessarily break the threads uniting and allying that group with all parts of the linguistic area. If we wished to refer the Slavo-Lithuanian, along with the Teutonic, languages to a special group, we should have to ignore the points of relationship, (line II.) which bind it to the Hindu-Persian languages. If we wished to get out of this difficulty by ranking the whole of the North European languages nearer to Hindu-Persian, we should have to break the bond (line I.) which embraces all the European languages (and the Armenian), and so on.

As, then, according to J. Schmidt, the whole linguistic area of the Indo-Europeans was originally connected together by a chain of "continuous varieties," he has now still to answer the question: How comes it that this state of things no longer exists at the present day, how comes it that instead of the gradual transitions between linguistic regions, such as the Slavonic and Teutonic, the Celtic and Italian, &c., there are now sharp delimitations of language: that "the unbroken slope from Sanskrit to Celtic" has now become "a flight of steps" (*Verwandtschaftsverh.*, p. 28)? J. Schmidt explains this by the dying-out of certain intermediate varieties. Supposing that two dialects, A and X, in the linguistic area were connected together by the varieties B, C, D, &c., in a continuous chain, it might easily happen that one family or tribe, which spoke

the variety F, for instance, obtained, owing to religious, social, or other circumstance, a preponderance over its immediate neighbours. Then the varieties next to it, G, H, I, K on the one side, and E, D, C on the other, would be crushed out and displaced by F, when this had happened, F would border immediately on B on the one side, and L on the other. The delimitation of the languages is effected. As historical examples of what he advances, J. Schmidt points to the crushing power of the Attic, Roman, and New High German dialects as regards the other dialects of Greek, Italian, and German.

But J. Schmidt's theory, besides its importance for our knowledge and for the historical explanation of the affinities of the Indo-Germanic languages, is equally important in its bearing on the whole foundation of linguistic inferences as to the primeval period—that is, on the reconstruction of the original language. The question, in how many languages a word must be forthcoming in order to establish its claim to the title of Indo-Germanic, could be answered without much difficulty from the point of view of the pedigree theory, if only the theory could be brought to a satisfactory scientific conclusion. If the decision were in favour of an original division of the Indo-Europeans into a western and an eastern half, the existence of a word in but one single European and one single Asiatic language (*e.g.* Lat. *ensis* + Sans. *âsi*, "sword;" Lith. *duna*, "bread" + Sans. *dhânâs*, "grains of corn") would be enough to justify the ascription of the concept designated to the primeval period. Or if the decision were that the Hindu-Persian languages maintained a longer connection with a North European or South European group, a word which could be established in but two European languages, in the north and in the south of Europe (*e.g.*, κπος + O.H.G. *huoba* or φώγω + O.H.G. *bahhu*, "bake"), would be valid for the primeval period. Then, in both cases, all languages which made no contribution to the equations *ensis* + *asi*, *duna* + *dhânâs*, κῆπος + *huoba*, φώγω + *bahhu*, would originally have possessed the corresponding words but have lost them subsequently, a proceeding which in itself has nothing remarkable.

On the other hand, in presence of J. Schmidt's transition theory, there is a complete disappearance of "the mathematical certainty which was supposed to have been obtained for the reconstruction of the original Indo-Germanic language." For it is obviously impossible for adherents of this theory to show whether words which are limited to groups of languages have been lost by the other languages or were never possessed by them. For the rest, J. Schmidt's undulation or transition theory, which we have so briefly sketched, is, however, based on views as to the tendency to differentiation existing in the Indo-Germanic languages, which were by no means entirely new or unheard of. Max Müller (p. 52), Ebel (p. 54), Sonne (p. *ib.*), nay! even A. Schleicher (p. 48), and above all A. Pictet * and F. Spiegel (*cf.* ch. iv.), had developed similar

* Cf. *Origines Indo-Europ.*, v. p. 48:—"Ce qui est certain, dans l'état actuel des choses, c'est que l'on remarque, entre les peuples de la famille arienne

views more or less clearly. Nevertheless it was natural that when systematised by J. Schmidt, and applied to the Indo-Germanic languages in the concrete, they should provoke an extremely stormy discussion.

The most complete approval was bestowed on J. Schmidt by those investigators who had made the relationship of modern languages to each other their special study.

Here, some time before J. Schmidt, Hugo Schuchardt in his book *Vocalismus des Vulgärlateins*, Leipzig, 1866 (*cf.*, particularly, ch. iv., *Die innere Geschichte der römischen Volkssprache*, I. *Dialekte*), had paved the way for the new view as far as the Romance languages were concerned.

This is shown most clearly in the department of German dialects, in the investigation of which especial service has been rendered by W. Braune in several essays in the *Zeitschrift Paul u. Braune Beitr. z. Gesch. d. deutschen Sprache* (*cf.*, especially, i. p. 1, *f.*, and iv. p. 540, *f.*). To illustrate what is said, I again take the liberty of drawing a small diagram, representing the results brought about in the department of Old High German by the propagation, from about the sixth or seventh century to the end of the ninth or beginning of the tenth century, of some phonetic changes of the greatest importance for determining the affinities of the O.H.G. dialects. The numerals I.–IV. in the diagram indicate, in chronological order, the four stages in which the so-called Second or Old High German sound-shifting was propagated over the German dialects.* The numeral

comme une chaîne continue de rapports linguistiques spéciaux qui court, pour ainsi dire, parallèlement à celles de leur positions géographiques. . . . Les émigrations lointaines auront été précédées par une extension graduelle, dans le cours de laquelle se seront formés peu à peu des dialectes distincts, mais toujours en contact les uns avec les autres, et d'autant plus analogues qu'ils étaient plus voisins entre eux."

He illustrates his view by the following diagram :—

FIG. 7.

The circle in the middle of the ellipse stands for the original Indo-Germanic language.

* The four strata of this sound-shifting are :—

I. *t–z*; *p* and *k* after vowels; *f* and *ch* (O. H. G. *zît*: Eng. *tide*, *kauffen*: Eng. *keep*, *suohhan*: Eng. *seek*).

II. *p*, initial and medial after consonants, &c.—*ph*, *f*; *d–t*. (Upper Saxon

V. marks the area of the *uu*, as opposed to an earlier *no* (*puut*, *muut*) evolved from original *ô*; the numeral VI., the area of the Frankish dialects as regards the complete carrying out of the *umlaut* or "mutation," which in the Upper Saxon dialects was superseded by certain consonantal combinations such as *l* + *cons.* (Frank. *bilga*, *belgi*; Upper Saxon *palga*, *palgi*.)

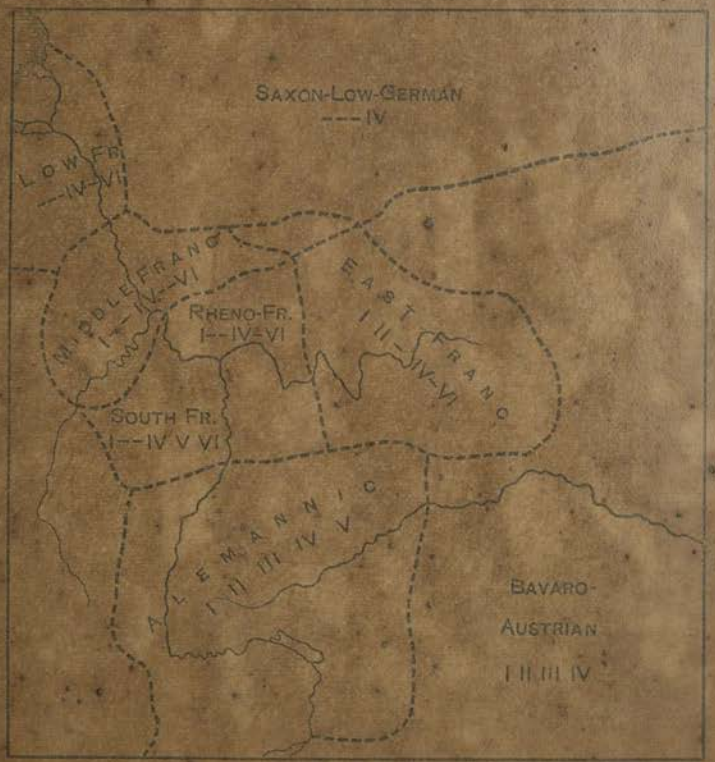

FIG. 8.

Our picture does not, I believe, require any extensive commentary. It shows that here, too, sharp dividing lines between the various dialects are wholly out of the question. Thus the two Upper Saxon dialects are apparently united into one whole by the numeral III., yet are interwoven as closely as possible with certain

and East Franconian *pfad*, *pfunzôn*, *tât*, *tiuri*; Rhenish-Franconian, &c., *pad*, *punzôn*, *dag*, *diuri*; in the middle of words, also, a Rheinfr., &c., *d*–, *dâtun*. East Fr. *tâtun*: Eng. *did*.)

III. *k*, initial and medial after consonants, &c. —*ch*; *l*–*p*; *n*–*k*. (Only Upper Saxon *chind*, *chuning*: Frank. *kind*, *kuning*, Upper Saxon *kepan*: Frank. *gebank*.)

IV. Extending over Low Frankish (Dutch) and Saxon *th*–*d* (*dri*: Eng. *three*, *dief*: Eng. *thief*).

sections of Frankish by the numerals II. and V. Again, in face of the operation of the sound-shiftings illustrated by us, they cannot be sharply marked off from Saxon (Low German). Middle Frankish does indeed take part in the most important stage (I.) of the sound-shifting, which embraces Upper Saxony, the East, Rhenish, and South Franks, though with certain important exceptions (*dat, wat, lit, allet*); but at the same time Low Frankish (Dutch) has a thoroughly Low German consonantal system. Finally, the IV. stage of the sound-shifting extends equally to all the dialects.

What, however, excites our interest especially in the processes depicted by us, is the fact that here we really are able to establish the starting-point, and to trace the gradual spread of some of the phonetic transitions set forth by us. Thus, in Alemannia the shifting, *th–d*, appeared in the beginning of the eighth century. At this period, however, the old spirant was uniformly retained, at any rate at the beginning of words, by the whole of Frankish. It is not until the end of the ninth century that *th* disappears from amongst the Franks, and that *d* takes its place. Among the Middle Franks, and further north, the *th* held out still longer. The spread of one sound-shifting therefore, in this case from south to north, is seen very clearly.

Finally, J. Schmidt himself, in his book *Zur Geschichte des idg. Vocalismus*, ii. 199, *ff.*, endeavoured to present the relation of the Slavonic dialects to each other from the standpoint of the "undulation" or "transition" theory.

Apart from fundamental differences of opinion between the assibilants, the attacks on Schmidt's theory, which were made particularly by Whitney, G. Curtius, Havet, L. Meyer, Jolly, and A. Fick, were directed particularly upon that point (*cf.* our diagram, p. 65, line II.), which J. Schmidt had made the main argument for the intermediate position of the Lithu-Slavonic peoples between Europe and Asia—that is, on the change in a great number of words common to the Lithu-Slavonic and Hindu-Persian languages of an original *k* into a sibilant (*ç, s, ś*), *cf.* Sans. Iran. *dáçan*, O.S. *desętĭ*, Lith. *dészimtis*, G. δέκα, Lat. *decem*, &c. A. Fick endeavoured (*Die Spracheinheit der Indogermanen Europas*) to deprive Schmidt's argument of its force, by trying, as Ascoli indeed before him had tried, to show that there had existed from an early time in the original Indo-Germanic language two different *k*-sounds, one with a palatal tendency, *kj* (*k*), one with a guttural tendency, *kv* (*q*), the former of which was represented by the sibilant of the Lithu-Slavonic and the Hindu-Persian languages, the latter, even in the languages mentioned, by *k* (*c*), and in the remainder by *k, p, qu*. From the beginning, therefore, there existed side by side, for instance:—

kj (*k*), Sans. *çván*, Lith. *szů*, G. κύων, Lat. *canis*, Ir. *cú*.

kv (*q*), Sans. *ka*, Lith. *kas*, O.S. *kŭto*, G. κότερος, πότερος, Lat. *quod*, O.I. *ca-te*.

The same holds goods of the medial *g* and the aspirate *gh*.

Indubitable as it is that the assumption of two *k*-sounds for the

primeval Indo-Germanic period has now found acceptance amongst most scholars, in spite of J. Schmidt's opposition. J. Schmidt seems to me justified in maintaining (*Jenaer Litteraturzeitung*, 1875, No. 201) that the assumption of two series of gutturals is not such as to weaken the force of his argument in support of the transition, and against the pedigree theory. For if the decision is in favour of a *kj* and a *kv*, the cohesion of the Lithu-Slavonic and Hindu-Persian languages in shifting into *ç*, *s*, *sz*, the *k* which the other languages retained as *kj*, remains quite untouched.

Besides, Armenian, as we have already remarked, must be ranked in this respect along with the Hindu-Perso-Slavo-Lithuanian languages. *Cf.* Arm. *tasn* = O.S. *desęti*, Sans. *daçan*; Arm. *sun*, "dog" = Lith. *szů*, Sans. *çván*, &c. Relying on these and similar grounds, H. Hübschmann, one of the best scholars of this language, regards Armenian as "an independent branch of language to be placed between Iranian and Slavo-Lettish." (*K. Z.*, xxiii. p. 5, *f.*)

The same holds good, as has been shown by G. Meyer's Albanian studies (Vienna, 1883 and 1884; *B. B.*, viii. 186, *ff.*), of Albanian, which this scholar accordingly places nearer to the Lithu-Slavic than the South European languages.

Similarly, the question has lately been raised whether the uniform *a* of the Hindu Persian languages, as contrasted with the *a*, *e*, *o* of the European (Sans. *açvas* = G. *ἵππος*, Sans. *ásti* = G. *ἐστί*, Sans. *ávis* = G. *ὄις*), really represents the original state of things, and the result, owing in no small measure to a work of J. Schmidt's (*Zwei urische a-Laute und die Palatalen*, *K. Z.*, xxv. p. 1, *f.*), has been to demonstrate in the most conclusive manner the existence in the original Indo-Germanic language of an *â* corresponding to the European *a*. But this constitutes no objection to the transition theory. In this case the European and Armenian languages must be credited with the conservation of the old state of things; and in the rejection of the original *a* and *â* we must see an innovation common to the Hindu and Iranian languages.*

J. Schmidt's hypothesis is dealt with from a new point of view by A. Leskien, *Declension in Slavo-Lithuanian and Teutonic* (*Die Declination im Slavisch-litauischen und Germanischen*, Leipzig, 1876). Having explained (Introduction, p. 10) that he cannot conceive how the Indo-Germanic peoples could keep on spreading until they came to occupy their present abodes, without actual, geographical separation, he declares his opinion that the transitional stages which are postulated by J. Schmidt, and which presuppose the geographical continuity of the Indo-Germanic area, can only be understood if this continuity is supposed, before the spread of the peoples, to have extended over a relatively narrow district. This, however, opens up the possibility of combining the transition and pedigree theories. For instance, if *b* represents the forefathers

* The old *â* is preserved by another Asiatic Indo-Germanic language besides Armenian.—Phrygian (*cf.* Fick, *Die Spracheinheit der Indog. Europas*, p. 416). Hübschmann, *K. Z.*, xxiii. p. 49, considers it probable that this language is most closely related to Armenian.

of the Slavs and Lithuanians in the primeval Indo-Germanic period, *c* those of the Hindu-Persians, *a* those of the Teutons—

then *b* and *c* may have been connected by certain peculiarities of dialect (*e.g.*, Hindu-Persian *ç* (*s*) = Slavo-Lith. *s*, *sz*). Subsequently it may have happened, owing to the departure of *c*, or the joint emigration of *a* and *b*, that the geographical continuity of the line *a–c* may have been broken, and that *a–b* may have jointly developed some new peculiarities (perhaps Teut. *m* + Slavo-Lith. *m* = previous *bh* in suffixes). Thus, the peculiarities which *b* (Slavo-Lithuanian) shares with *c* (Hindu-Persian) would admit of explanation, and yet it would be justifiable "to enquire whether Lithu-Slavonic could be ranked with Teutonic (*b*) in a separate group, having a development of its own, distinct from the whole or the other parts"[3] (p. 27).

The importance of Leskien's view undoubtedly consists in the weight which, in order to explain the existing divisions between the Indo-Germanic languages and peoples, he throws on the necessity of assuming that they were geographically divided—a necessity to which J. Schmidt, for other reasons as well as the dying out, perfectly possible in itself, of intermediate varieties, (*cf.* p. 65), had not allowed sufficient weight. For the rest, the views of the two scholars are extremely similar. J. Schmidt, therefore, explains (*Jenaer Litteraturzeitung*, 1877, p. 272):—"The fact that the Slavo-Lettish languages share certain peculiarities with the Hindu-Persian languages alone, and certain others with the Teutonic or other European languages, that is to say, constitute the 'organic link' between these two groups, remains untouched in spite of all attacks. That all these peculiarities arose simultaneously, it never entered my head to assert. We know as yet nothing about their chronology, and all probability is in favour of their not having been simultaneous. It is, therefore, perfectly possible that the Slavo-Lettlanders experienced certain phonetic changes in common with the Hindu-Persians, say in the earliest of periods, that later they lost their connection with the Hindu-Persians, drew closer to the Europeans, and went through the same linguistic changes as they. My point was to show that an original, homogeneous European language, as contrasted with a Hindu-Persian, never existed; that when those characteristics which are

[3] Leskien's idea is applied, if I understand him aright, by P. v. Bradke, *Beiträge zur Kenntniss der vorhistorischen Entwicklung unseres Sprachstammes*, Giessen, 1888, to the relation of certain Indo-European peoples; he ascribes the points of agreement between the Greek and Italian branches, in regard to language and culture, to a Graco-Italian epoch, from which he makes the Italians detach themselves in order to unite with the Celts in a Celto-Italic period. Cf. *Literar. Centralblatt*, 1888, No. 20.

specifically European developed, the languages in which they made their appearance were no longer identical in all respects."

Finally, Karl Brugmann has dealt exhaustively with the question of the relationship of the Indo-European languages to each other in the *Internationalen Zeitschrift für allgemeine Sprachwissenschaft*, i. 226, *ff.*

Brugmann stands, as regards theory, at the point of view of Schmidt and Leskien, as also does H. Paul in his *Principien der Sprachgeschichte*[2], Halle, 1886 (*cf.* ch. ii., *Die Sprachspaltung*). Thus, Brugmann, in his *Grundriss der Vergleichenden Grammatik der idg. Sprachen*, i. 290 (Strassburg, 1886), like J. Schmidt, regards it as "possible and not improbable" that the often mentioned difference between the Indo-European languages in their treatment of the palatal *k*-series "reflects a difference of articulation dating from primitive Indo-European times, that the original sounds were modified in the direction of the spirant in one district of the primitive Indo-European region, while elsewhere they remained unaffected. These dialectical differences then continued to propagate themselves in the individual branches." *Cf.* also p. 308 in respect to the velar *k*-series.

As regards the question of the relation of the Indo-European languages in detail, however, Brugmann in the paper referred to establishes with great acuteness an objection levelled as much against the undulation as the pedigree theory: he points out that the special agreements between two or more languages frequently are due merely to chance. "The character and tendencies of the Indo-European languages, even after the dispersion of the original people, remained in essentials the same; the mental and physical organisation of those who inherited and carried on the language remained similar on the whole; the motives to make new forms were often identical: from like causes then why not like effects?" p. 31, and ditto:—"Do we not regard it as a mere coincidence that, for instance, the original *mediæ* have been shifted into *tenues* in the same way in German and Armenian, as in Goth. *taihun*, Arm. *tasn*, as against Sans. *dáça*, G. δέκα, &c.? Why then shall we not regard it also as mere chance that the original Indo-European *mediæ aspiratæ* have been shifted into *tenues aspiratæ*, both in Greek and in Latin, as in G. θυμός, orig. It. **thūmos* (*fumus*), as against Sans. *dhūmá-s?*" &c.

Under the circumstances it is, p. 253, "not some individual nor some few linguistic phenomena, appearing simultaneously in two or more regions, which suffice to prove close connection, but agreement in a great number of innovations—phonetic, inflectional, syntactical, and lexical—a number which will exclude the idea of chance."

A close connection accordingly can only be demonstrated as existing between the Hindus and Persians, and the Slavs and Lithuanians. It may, perhaps, in the future be demonstrated also in the case of the Celtic and Italian languages.

In this connection we have the question:—"In how many of the

seven principal branches must a linguistic phenomenon be established in order to rank as primitive Indo-European?" Here, too, all that can be said is: — "The probability that we have to do with a primitive Indo-European form increases with the number of languages in which a linguistic phenomenon occurs." The rank of Indo-European may also be claimed for such linguistic phenomena as appear in identical form in districts geographically remote from each other, as in this case the probability, otherwise great, of borrowing, which Brugmann assumes, especially in the case of the vocabulary, is diminished.

APPENDIX.

THE INVESTIGATION OF LOAN-WORDS IN THE INDO-GERMANIC LANGUAGES.

Besides the direct way of reconstructing prehistoric periods of culture by the aid of Comparative Philology, there is another indirect way leading to the same end. In the life of every language, as is well known, there collects round that portion of its vocabulary, which is inherited from primitive times, another portion, imported from abroad. No language runs its course free from loan-words. Now, since the borrowing of a word, at least as a general rule, implies the borrowing of an idea also, it is clear that a collection of the loan-words or foreign words in a language must contain important hints as to what elements of civilisation have been imported by a people from abroad, and therefore were not inherited from primitive times. It may, therefore, not be out of place to make brief mention here of the most important scientific works dealing with the loan-words of the Indo-Germanic languages. There is no continuous work to mention dealing with the Hindu-Persian languages. The vocabulary of the Rigveda (as of the most ancient Sanskrit generally), the purest and most unadulterated in the whole range of the Indo-Germanic peoples, would yield but few results. More in quantity and in importance might be afforded by the Zend Avesta, on which subject many remarks are to be found in Justi's *Handbuch der Zendsprache*. The modern Iranian dialects, naturally, are studded with Semitic, Turkish, and other elements; yet I have not made acquaintance with a single even tolerably exhaustive account of them. For Armenian, Paul de Lagarde's *Armenian Studies* (*Armenische Studien*, Göttingen, 1877) must be referred to, in which, on pp. 166–88, a tabular conspectus of the points in which this language agrees with Semitic is given.*

We find a very different state of things the moment we set foot on European territory.

To begin with, here, from the very revival of philological studies

* *Cf.* further, H. Hübschmann, *Armen. Stud.* (1883), p. 7, *ff.* This scholar in *Etymologie und Lautlehre der ossetischen Sprache* (1887), gives a provisional conspectus of Ossetic loan-words (pp. 118–36).

in Germany, the relations of Hebrew to Greek had been the subject of learned speculation. The barren attempts to explain the various resemblances between these two languages as due to the common origin of the two languages (*cf.*, *e.g.*, Ernesti, *De Vestigiis linguæ Hebraicæ in lingua Græca*, Opusc. Phil., p. 177, *f.*) was followed, when the science of Comparative Philology had finally established the genealogies of the two languages, by the correct interpretation of the Semitic elements in the older Greek vocabulary as loan-words due to the influence of Phœnician civilisation on Greece. They were first collected by Gesenius, the founder of Semitic philology, in his *History of the Hebrew Language*, i. 18. He was followed by E. Renan, *Histoire des Langues Semitiques*, p. 192. Smaller and scattered contributions were supplied by Benfey, Fr. Müller, Schröder, P. de Lagarde. In recent times the first to attempt to give a connected account of the importance of Græco-Semitic loan-words for the history of culture was F. Lenormant in an essay entitled *The Cadmus Myth and Phœnician Settlements in Greece* (*Annales de Philosophie Chrétienne*, 1867, then in *Die Anfänge der Cultur*, Jena, 1875). The remark must be made, however, that Lenormant's work would furnish a very unsafe foundation for further researches into the history of culture, as the French anthropologist and orientalist employs in matters of Comparative Philology a method of his own, not familiar to Indo-Germanic students; and repeats earlier comparisons of Semitic and Greek, and evolves new ones, with absolutely no attempt at criticism.

It was, therefore, a most meritorious task that A. Müller undertook in a paper on *Semitic Loan-Words in Older Greek* (*Semitische Lehnwörter im älteren Griechisch*, *Bezzenbergers Beiträge z. Kunde d. Indog. Sprach.*, i. pp. 273–301), to establish, by means of undoubted loan-words from the Semitic, definite phonetic equivalents in words borrowed by the one language from the other, which enabled him to test the parentage of those constituents of the Greek vocabulary which until then had been regarded as Semitic. But the one hundred and two words whose claims to be Semitic are tested, are reduced by this refining process to a still more manageable number (*cf.* p. 299, *f.*). However, a number of Greek words which recur in the Semitic languages are regarded by Müller as foreign to Greek soil, although he cannot decide as to their original home. For instance, *κάρπασος*, "fine flax," Sans. *kárpâsa*, Aram. *karpas*, Arab. *kirbâs*; *κῆβος*, *κῆπος*, "ape," Sans. *kapi*, Hebr. *qôf*; *σάπφειρος*, Sans. *çanipriya*, Hebr. *sappir*; *σμάραγδος*, Sans. *marakata*, Hebr. *bâreqet*, and others.

A very bold and heterodox view is entertained, as to many of the words under discussion, by F. Hommel in the work already mentioned, *The Names of the Mammals amongst the South Semitic Peoples*, pp. 290 and 414, *f.* He regards them, that is to say, not as comparatively late loans from the Semitic languages, but as primeval terms of civilisation, common to the original Semites and the original Indo-Europeans, and the clearest proof of the proximity

of the original abodes of these two peoples (*cf.* below, ch. iv.). This is his opinion as to ταῦρος (Indo-G. *staura* = orig. Sem. *tawr*), λίς, λέων (Indo-G. *liw*, *laiwa* = orig. Sem. *labi'atu*, *lib'atu*), χρυσός (Indo-G. *gharata* = orig. Sem. *hurûdu*), οἶνος (Indo-G. *waina* = orig. Sem. *wainu*).

An important controversy on the question whether Egyptian loan-words (such as Egypt. *bari·t* = G. βᾶρις, "a kind of ship") struck root in Greek has arisen in Bezzenberger's *Beiträge*, vii., between Ermann and O. Weise.

A collection of Egyptian words which occur in classical authors is given by A. Wiedemann (Leipzig, 1883).

Amongst the various civilisations, to the influence of which the Italian inhabitants of the Apennine peninsula were exposed in the course of their most ancient history, Greek alone, as being historically the latest and most penetrating, has left unmistakable marks on the Latin language. It is, indeed, extremely probable in itself that, to say nothing of the voyages of the Phœnicians which can only have grazed Italy (*cf.* Th. Mommsen, *History of Rome*, i.[5] p. 128; Eng. trans., pop. ed., i. p. 135), the proximity of Etruria must have introduced to the Italian tribes, in those departments in which Etruria appears as the mistress of Italy (building, ceremonies of worship, popular amusements, &c.), not only the new ideas, but also along with them their Tuscan designations: but these, so long as the Etruscan inscriptions remain undeciphered, can only be conjectured, not proved. To a relatively late period belong those words of Celtic or of North European origin generally, which penetrated into Latin, and which are collected by L. Diefenbach in the *Lexicon of the Linguistic Remains of the Celts and their Neighbours, Especially the Teutons and Spaniards, Preserved by the Ancients* (*Origines Europææ*, Frankfurt, 1861).

But the importance of the Greek loan-words in Latin for determining the influence exercised by Greece through the agency of her colonies on the development of Italian culture, was first put in its proper light by Th. Mommsen's *History of Rome* (1854, *cf.* i.[1] p. 130, and i.[3] p. 194, *f.*; Eng. trans., pop. ed., i. 206). After him, G. Curtius called attention to the great importance of this subject in a lecture given to the Hamburg Association of Philologists, 1855, *Hints on the Relation of Latin to Greek*. Here Curtius goes into the terminology of Roman shipbuilding especially, in which he distinguishes three strata, which give the evolution of the Roman marine:—

1. A primeval Indo-Germanic layer (words such as *navis*, *remus*).

2. A great layer of loan-words from the Greek (*e.g.*, *gubernare*, *ancora*, *prora*, *aplustre*, *anquina*, *nausea*, *antenna*, *faselus*, *contus*, &c.).

3. A limited number of genuine Roman, but not Indo-Germanic words (*malus*, *velum*).

The first considerable service in the collection of Greek loan-words in Latin was rendered by A. Saalfeld in two treatises—*Index Græcorum vocabulorum in linguam latinam translatorum* (Berlin,

1874), and *Greek Loan-Words in Latin* (*Griechische Lehnwörter im Lateinischen*, Programm, Wetzlar, 1877). This is followed by a work of E. Beermann, *Greek Words in Latin* (*Griechische Wörter im Lateinischen, Sprachwissensch. Abhandl. hervorg. aus G. Curtius' grammatischer Gesellschaft*, Leipzig, 1874, pp. 95–110), in which there is a short summary of the Greek elements of civilisation in Roman antiquities.

All these works, however, by the side of which we might have also mentioned contributions by Corssen, Ruge, Tuchhändler, Vaniček, and for the department of rural economy the *Haustiere und Culturpflanzen* of V. Hehn, have been recently superseded by the marvellously thorough and cautious work of O. Weise, *Greek Words in Latin* (*Die Griechischen Wörter im Latein, Preisschrift der Fürstlich Jablonowskischen Gesellschaft*, Leipzig, 1882). It falls into three parts, of the first of which the subject is specially "how to recognise loan-words;" the second answers the question: "In what departments can the influence of Greece be detected;" the third gives a careful list of the words borrowed by Latin from Greek.

To these was added in 1884 the *Tensaurus Italo-græcus*, a copious, historical, and critical dictionary of Greek loan-words in Latin by A Saalfeld, Vienna. *Cf.* also his *Italo-græca*, part i. (intercourse between Hellas and Rome from the most ancient period to the time of the Cæsars), 1882; part ii. (trade and commerce of the Romans), 1882.

A stream of culture in the opposite direction, from Italy to the Balkan peninsula, is seen most markedly if we set aside Roumanian in Albanian (*cf.* above, p. 70), which, "during the period of the Roman empire in Illyria, was within a hair's breadth of sharing the lot of other non-Roman languages, and of becoming completely Latinised" (*cf.* G. Meyer, *Die lat. Elem. im Albanesischen. Gröber's Grundriss*, p. 804, *ff.*).

In the north it might be expected beforehand that the department of the Teutonic languages would have numerous and important foreign elements to show. The Teutonic peoples, situated in the heart of Europe, and by nature susceptible to the advantages of foreign culture, at the same time form a great basin in which collect all the streams of culture in Europe, from whatever quarter they may come. This state of things is faithfully mirrored in the stock of loan-words belonging to the Teutonic languages. Here we have only to do with the literature which treats of the oldest elements.

There exist as yet only isolated notices of the loans obtained by the Teutonic languages from Celtic. But as these go back to a very early period in the communication between these peoples, it may well be difficult to distinguish in a given case between kinship and borrowing (*cf.* part ii., ch. vi.). Greater attention has been paid to correspondences between Teutonic and Slavonic (words such as Goth. *stikls*, O.S. *stĭklo*, Lith. *stiklas*, "beaker;" Goth. *kintus*, O.S. *cęta*, "small corner coin;" Teut. *pflug*, Slav. *plugŭ*,

Lith. *pliúgas*; O.H.G. *choufan*, O.S. *kupiti*, "buy;" Goth. *dulgs*, O.S. *dlŭgŭ*, "debt;" Goth. *plinsjan*, O.S. *plęsati*, "dance," and many others), though it has not indeed been found possible on the one hand to distinguish what is related from what is borrowed, or on the other to establish with certainty the starting-point of a loan (*i.e.*, whether it started on Slavonic or on Teutonic ground). *Cf.* H. Ebel, *Ueber die Lehnwörter der deutschen Sprache*, p. 9; Lottner, *K. Z.*, xi. p. 74, *f.*; as also the collection of Slavonic loan-words to be mentioned hereafter.

But these communications of the Teutons with their northern neighbours are far inferior in importance to the influence which the culture of southern Europe exercised on the ancient Germans, when it came in close contact with them. Relatively insignificant, and only to be traced in Gothic to any great extent, are the direct points of contact between Greek and Teutonic. On the other hand, the Roman people undertook, in the history of the world, the task of delivering the treasures which in part it had itself first received from abroad, to the people by whom it was destined one day to be driven from the stage of history. And the influence of Rome, operating from the two mighty base-lines of the Rhine and the Danube, which embraced ancient Germany, acted with such uniform effect on all the Teutonic tribes that, as against it, the Germans, though separated by differences of dialect, appear in the matter of language to form but one great homogeneous whole. What heathen Rome began, Christian Rome completed; opening wide the gates to the pressure of the Latin tongue.

After these remarks I confine myself to a brief statement of the literature of the loan-words in the Teutonic languages, so far as it is known to me.

1845, R. v. Raumer, *Die Einwirkung des Christentums auf die althochdeutsche Sprache*, Stuttgart.

1856, H. Ebel, *Über die Lehnwörter der deutschen Sprache* (*Programm des Erziehungs-Instituts* Ostrowo bei Filehne).

1861, W. Wackernagel, *Die Umdeutschung fremder Wörter* (at first a *Programm zu der Promotionsfeier des Padogogiums in Basel*, then *Kleinere Schriften*, iii. p. 252, *f.*).

1874, E. Förstemann, *Geschichte des deutschen Sprachstammes*, i. pp. 612–18.

1884, W. Franz, *Die Lateinisch-Romanischen Elemente im Althochdeutschen*, Strassburg.

1888, A. Pogatscher, *Zur Lautlehre der Griechischen, Lateinischen und Romanischen Lehnworte im Altenglischen*, Strassburg.

1889, F. Kluge, *Lateinische Lehnworte im Altgermanischen* (in Paul's *Grundriss d. germ. Phil.*, i.).

There has been added to the well-known dictionaries by Grimm, Schade, Weigand, and others, recently an *Etymologisches Wörterbuch der deutschen Sprache*, by F. Kluge, Strassburg, 1882, 4th ed. 1888.

If we now turn to the eastern neighbours of the Teutonic peoples, the foreign elements of the Slavonic languages are to be found

collected by F. Miklosich, *Die Fremdwörter in den slavischen Sprachen* (*Denkschriften der phil.-hist. Classe der Kaiserl. Akademie d. Wissenschaften*, xv. pp. 71–140, Wien, 1867). As we run through this imposing catalogue, alphabetically arranged, foreign influence on Slavonic, in ancient times, is seen to have observed the following tendencies. To begin with, the larger number of these foreign elements belong to that sphere of civilisation which, starting from the classical soil of the Mediterranean countries, embraces the Teuto Slavonic (and partially Celtic) north (*cf.* words such as G.-Lat. διάβολος, O.H.G. *tiuval*, O.S. *djavolŭ*; G. καῖσαρ, Lat. *cæsar*, O.H.G. *kaisar*, O.S. *cěsarĭ*, &c.). Not unfrequently it is doubtful here whether the loan was effected by Slavonic direct from the Græco-Latin or through the agency of the Teutons. In some words both things have taken place. Thus O.S. *kaležĭ*, "beaker," directly = Lat. *calix*; while O.S. *kelih*, Russ. *keljuchŭ*, with their final *h*, come straight from the German (O.H.G. *chelih* = *calix*). Further, considerable number of Greek terms of civilisation found their way into Slavonic direct from Byzantine soil, and are limited to the Slavonic languages (*cf.* O.S. *plinŭta*, "brick," πλίνθος; O.S. *kositerŭ*, "tin," κασσίτερος; O.S. *izvistĭ*, "chalk," ἄσβεστος; O.S. *kadĭ*, "jug," κάδος; O.S. *korabilĭ*, "ship," κάραβος, and others).

Sharply marked off from the class of foreign words just mentioned, which derive their origin from the south of Europe, are words in the Slavonic languages corresponding to Teutonic and to some degree Celtic words (O.S. *bračina*, O.H.G. *prnoh*, Lat.-Celt. *bracæ*, "trousers," Russ. *jabednikŭ*, "*magistratus quidam*," Goth. *andbahts*, Celt. *ambactus*, &c.). The difficulties which these offer we have already alluded to.

Finally, oriental influences, both Iranian (*cf.*, *e.g.*, Russ. *korda*, Pers. *kārd*, "knife") and Turko-Tartaric (*e.g.*, Russ. *kazanŭ*, Turk. *quazân*, "treasure;" *cf.* H. Vámbéry, *Die primitive Cultur des turko-tatarischen Volkes*, p. 25), on the Slavonic vocabulary are unmistakable.

On the latter, light is thrown by Miklosich, *Die türkischen Elemente in den süd-ost und osteuropäischen Sprachen*, Vienna, 1884. Here this scholar distinguishes three periods of word-borrowing: first, the first century of our era, before the Slavonic peoples were seized by the impulse to move westwards; second, the period which begins with the subjugation of the Slavonic inhabitants of the right bank of the lower Danube by the Turkish Bulgarians; thirdly, the period of the permanent settlement of the Turks in Europe (fourteenth century).

Since Miklosich, Ant. Matzenauer has collected the loan-words in Slavonic, in a work *Cizí slova ve slovanských řečech v. Brně*, 1870. Unfortunately, the language in which it is written precludes me from making use of it. From numerous quotations in Krek's *Introduction to Slavonic Literature* (*Einleitung in die slavische Litteraturgeschichte*), it appears that Matzenauer regards many words as original Slavonic which Miklosich considers to be borrowed. The Slavonic elements of the Lithuanian vocabulary are collected

in the work of A. Bruckner's already mentioned, *Slavonic Words in Lithuanian* (*Die slavischen Fremdwörter im Litauischen*, Weimar, 1877). Finally, to dwell for a moment on Celtic, extremely little has been done in the way of putting together the words borrowed from abroad. The most important Latin loan-words in Old Irish are put together by Ebel (*Beiträge*, ii. p. 159, *f.*), and in *Three Irish Glosses* by W. S(tokes), London, 1862, Preface, p. 20, *ff.* There is further to be noted Bruno Güterbock, *Bemerkungen über die Lateinischen Lehnwörter im Irischen*, Leipzig, 1882.

For the foreign elements in the vocabulary of the Romance languages the principal authority still is Diez's etymological dictionary (5th ed.). The standard work on Celtic influences therein is still R. Thurneysen, *Keltoromanisches*, Halle, 1884; important for the inter-action of the Teutons and Romans is F. Kluge in Gröber's *Grundriss der romanischen Philologie*, 1887, p. 383, *ff.*, and E. Mackel, *Die Germanischen Elemente in der französischen und provenzalischen Sprache*, Heilbronn, 1887. Arabic in the Romance countries, finally, is treated of by Chr. Seybold (Gröber's *Grundriss*, p. 398, *ff.*).

CHAPTER IV.

THE SEARCH FOR THE ORIGINAL HOME OF THE INDO-GERMANIC PEOPLE.*

The question as to the original home of the Indo-Germanic people seemed, as we saw in our first chapter, to have been definitely settled as long as thirty or forty years ago. The reasons which led investigators to the valley of the Oxus, or the slopes of the Mustagh or Belurtagh (*cf.* above, p. 8, note), as the first starting-point of the Indo-Europeans, were partly of a general nature, consequent upon considering Asia as the birthplace of the human race and of human civilisation generally, and partly consisted in the generalisation of certain indications, which the most ancient, mythical history of the Hindu-Persian peoples seemed to contain, touching their original homes, and in the application of them to the other Indo-Germanic tribes.

As soon as a beginning had been made in the way of exploring the civilisation of Indo-Germanic antiquity, by means of Comparative Philology, attempts were not wanting to discover arguments adapted to raise this hypothesis as to the origin of the Indo-Europeans to the level of historical certainty. The first to make this attempt was Adolphe Pictet, the first volume (1859) of whose *Origines Indo-Européennes*, as we have seen, was devoted to showing that the home of the Indo-Europeans must be looked for in ancient Bactria, or, to be more precise, in the country between the Hindu-Kusch, Belurtagh, the Oxus, and the Caspian Sea.†

The general considerations, on the strength of which Pictet decides in favour of this district, are in their essence identical with those which have already been mentioned by us. Only, especial weight is assigned by Pictet to the geographical distribution of the Indo-Europeans, in historical time, as showing of itself that Bactria was the common starting-point of the scattered tribes. We have

* Sketches of the history of the original home question have recently frequently been given: O. Kirk, *Einleitung in die slavische Literatur*, [illegible] 1887, p. 4, *ff.*; by F. v. Spiegel, *Die Slavische Periode*, 1887, p. 1, *f.*, and others.

† Pictet allows only branches of the Hindu-Persian stock to climb the lofty valleys of the Belurtagh and Mustagh, whence they descended again into more favourable climes, when room had been made for them by the emigration of other members of the Aryan race (*cf.* p. 37).

seen above, p. 30, what is his theory of the original connection and gradual separation of the Indo-Germanic peoples. If this is applied to the geography of Bactria and the neighbouring countries, the abode of the forefathers of the Iranians would, according to Pictet (*cf.* p. 51, *f.*), be in the north-east, as far as the boundaries of Sogdiana; towards the Belurtagh; of the forefathers of the Hindus, again, in the south-east as far as the slopes of the Hindu Kusch. This situation of the two tribes, surrounded by lofty mountain ranges, is made, "since the movements of nations depend on their environment," to explain why they continued together undivided longer than the other Indo-Europeans. In the south-west of the district before-mentioned Pictet conceives the Graeco-Italians to have been situated, and their line of march was over Herat, through Chorassan, Masenderan towards Asia Minor, and the Hellespont. Furthest west, even in the original home, dwelt the Celts, who moved round the south of the Caspian in the direction of the Caucasus, made a long halt here, in the fertile districts of Iberia and Albania,* then burst through the Caucasus and swept northwards round the Black Sea, in the direction of the Danube and Europe. Finally, the north of the original home must have been occupied by the forefathers of the Teutons and Slavo-Lithuanians, whose abode extended along the Oxus. They took their way to Europe, across the broad plains of Scythia to the Euxine.

Our author, having thus been led by considerations of a general description to Bactria as the starting-point of the Indo-Europeans, finds his view further confirmed "in the most brilliant manner" by a whole string of other arguments, which he derives from the evidence of language as to the life and culture of the Indo-Europeans.

To begin with, as determining the general latitude, in which the original home of the Indo-Europeans is to be looked for, great weight is assigned by Pictet to the names which the original people had already given to the seasons of the year, and everything connected with those seasons. Now, as he assumes that the original Indo-Europeans divided the year into three parts: the winter (*hiems*), with its snow (*nix*) and ice (O.H.G. *is* = Iran. *isu*), spring (*ver*), and summer (O.H.G. *sumar*, Cymr. *ham*, Iran. *hamā*, Sans. *samā*), he is led, in accordance with an observation made by Jacob Grimm in his *German Mythology*, to the effect that as we go north the year divides itself into two seasons, summer and winter, and as we go further south into three, four, or even five, to infer a moderate climate and an intermediate latitude. This, however, agrees most excellently with the climatic condition of ancient Bactria, which although under the same latitude as Greece and Italy, yet owing to its elevation above the level of the sea corresponds in climate with

* The similarity in sound of the Caucasian *Iberia*, Spanish *Iberia*, Irish *Iverdh Clann* O.I. *Erin, Erend*, and also of the Caucasian *Albania* and the British "Αλβιον, on which the above hypothesis is based, is undoubtedly casual. *Cf.* H. Kiepert, *Lehrbuch d. alten Geographie*, pp. 86, 181, 528.

central Europe, and has a winter cold enough to frequently freeze the Oxus over from bank to bank (pp. 89–109).

A further confirmation of his view, Pictet believes, is afforded by those series of words which are significant for the topography of the original Indo-Germanic country. The numerous instances in which the Indo-Germanic languages agree in the names they have for hill and valley, river and stream, &c., would, indeed, only prove that the home of the Indo-Europeans was not destitute of mountains and water. Of greater importance, however, in his eyes, is the fact that before their dispersion the Indo-Europeans were acquainted with the sea, an inference which Pictet draws from the comparison of Lat. *mare*, Irish *muir*, Goth. *marei*, Lith. *márės*, O.S. *morje*, with Sans. *mîra*, "sea, ocean." Nay! by referring this stock of words to the root *mr* (*mar*, cf. *mors*), "to die," and placing it by the side of the Sans. *marú*, "waste, wilderness," he believes he is in a position to show that the sea which lay on the Indo-Europeans' horizon must have been the Caspian. This sea, separated from the cultivated districts of Bactria by wide plains of sand, might, to the minds of the original people, easily concur with the idea of "the waste" (*mîra*, *marú*).

There next follows the discussion of the three kingdoms of nature—the mineral, plant, and animal kingdoms—always with especial reference to the points adapted to support the hypothesis of the Bactrian origin of the Indo-Europeans. Now, since, as we have seen above, Pictet credits the original Indo-Germanic period with a knowledge of the most important metals, gold, silver, iron, copper, and even tin and lead, it follows, in his opinion, that the original Indo-Germanic country must have been very mountainous and rich in minerals. But of all the districts of Asia, at any rate of those which come under consideration as possible starting-points for the Indo-Europeans, Bactria, watered by the gold-bearing stream of the Oxus, and traversed by the metalliferous heights of the Hindu Kusch and Belurtagh, alone, according to Pictet, is capable of satisfying the conditions required of the original Indo-Germanic country by Comparative Philology (pp. 149–87).

In the plant-world, the only forest-tree the name of which recurs in Sanskrit, is the birch (Sans. *bhûrja* = Russ. *bereza*). But other equations and the abundance of common names for timber, tree, forest, &c., show that the native land of the Indo-Europeans was no treeless waste, but was rich in extensive forests (pp. 188–237).

Of greater importance, on the other hand, are the cultivated plants. Sanskrit, indeed, varies again in names for fruit-trees; nevertheless Pictet considers himself justified by the agreement of the other Indo-Germanic languages (*cf.* Teut. *apfel*, Lith. *obulas*, I. *uball*, referred by him to an imaginary *â-phala*, Sans. *phala*, "fruit," &c.), in ascribing the cultivation of certain kinds of fruit-trees such as apple, pear, plum, and also the vine, which is discussed in this connection, to the primeval Indo-Germanic period. Now, since the naturalists, and principally A. de Candolles in his

Géographie Botanique, place the home of fruit-trees, as well as of the vine, in the neighbourhood of Bactria, while Quintus Curtius praises Bactria's wealth in vines and fruit-trees, and is corroborated, as regards the districts of Balkh and Bokhara, by modern travellers. Pictet here gets a fresh confirmation of his Bactrian hypothesis (pp. 237–57).

The same conclusions are now drawn, in the department of the cereals and other cultivated plants, of which, as we have seen, by far the most numerous and most important are ascribed to the original Indo-Germanic world by Pictet. Thus, wheat and barley, the linguistic arguments for the culture of which in the primeval period have already been examined by us, are, also according to A. de Candolles, indigenous to the neighbourhood of Bactria, the former between the mountain ranges of Central Asia and the Mediterranean, the latter south of the Caucasus, on the shores of the Caspian Sea, and perhaps to Persia; so that again the Indo-Europeans must be classed amongst the earliest cultivators of these kinds of grain, and so on (pp. 257–327).

Finally, the animal kingdom is discussed. With reference to the fauna of the primeval Indo-Germanic period also, Pictet decides that in general it corresponds to a moderate climate, and particularly to that of ancient Bactria. The bear, wolf, fox, wild-pig, badger, hare, marten, pole-cat, weasel, marmot, hedgehog, mouse, &c., which still have their habitat in Bokhara and the neighbouring districts, our author succeeds in discovering *en bloc* in the vocabulary of the primeval Indo-Germanic period. He also credits it with an acquaintance with the great Asiatic beasts of prey, the lion and tiger, the former both because the European members of the Indo-Germanic family agree in the name they give to it (Lat. *leo*, &c.), and because its presence in Sogdiana is testified to by Quintus Curtius, viii. 2; the latter without any linguistic evidence (*cf.* above, p. 18).

Finally, Pictet finds with regard to the animals domesticated by man, the number of which, according to him, was, with the exception perhaps of the ass and the cat, complete even in the primeval period, that their centre of propagation was in the neighbourhood of ancient Bactria.*

Pictet's methods are unreservedly followed by E. Justi in the work which we have spoken of above (p. 22), *The Primeval Period of the Indo-Europeans* (*Über die Urzeit der Indogermanen*). Nor do the investigators who followed Pictet speak less decidedly in favour of Asia as the starting point of the Indo-Europeans, while they approximate more or less to the locality defined by Pictet. So A. Schleicher, so F. Misteli, who, however, does not reckon lions amongst the primeval Indo-Germanic fauna;* so Max Müller, who

* "We assume, therefore, that the Aryans were not acquainted with the lion. We are not, however, therefore compelled to shift the southern limit of the original home of the Aryans further north, nor to go too far away from India and Persia. Within the above-mentioned latitudes (40° and 41°) we can place them east of Sogdiana, the most elevated part of Central Asia, whither Curtius

nevertheless draws the opposite conclusion to Pictet, from *mare* and its cognates, viz., that the Indo-Europeans before their dispersion were not acquainted with the sea (*cf. Essays*, ii. p. 41, *f.*); so W. Soune, who makes the Indo-Europeans while they were yet in their original country spread far to the north of the Oxus (*cf.* above, p. 53), and many others.

After Pictet, the question as to the original home of the Indo-Europeans was most thoroughly discussed by J. Muir in the third chapter of the second volume of his *Original Sanskrit Texts*, 1860; second edition, 1871 (*Affinities of the Indians with the Persians, Greeks, and Romans, and derivation of all these nations from Central Asia*). However, the contributions of this scholar, after an ample refutation in section vi. of Curzon's view (mentioned above, p. 6), that the Indo-Europeans were of Hindu origin, consist entirely of extracts from the works of other scholars who had written in favour of Central Asia (*cf.* section vii., *Central Asia the Cradle of the Aryans*), and Muir, though he adopts the hypothesis, produces no new arguments in support of it. On the other hand, our attention is claimed by section viii. of Muir's work (*On the National Traditions of the Indians regarding their own Original Country*), for here the points are collected and reviewed which seem to favour the immigration of the Hindus from a land beyond the Himálayas. As proofs that the Hindus still preserved the tradition of a northern home he finds: first, the part played in the seasons, in the oldest hymns of the Rigveda, by the winter, which is gradually displaced by the autumn; next, the story to which Lassen, indeed, had called attention (*cf. Zeitschrift für die Kunde d. M.*, ii. p. 62, *f.*), the story of the blessed people of the *Uttarakuravah** (the Ὀττοροκορραι of Ptolemy), whom tradition places in the remotest north; third, a passage in the Atharveda, according to which the simple *kashta* (κόσσυς) grows on the other (the northern) side of the Himálayas; and fourth, a passage of the *Kaushitaki-brâhmana*, which speaks of the greater purity of the northern tongue. The story of the flood, in the *Çatapatha-brâhmana*, which we have mentioned above (p. 8, note), Muir, in the second edition of his book, no longer regards as conclusive—mainly on grounds of scholarship—the reading *atitudâva*, "he crossed over," *sc.* this northern mountain, being doubtful (*cf.* p. 323, note 96).

Section ix. of Muir's work (*Whether any Tradition regarding the Earliest Abodes of the Aryan Race is contained in the first Fargard of the Vendîdâd*) discusses, again in the way of extracts, the question whether the well-known enumeration of sixteen districts, in the section of the Zend Avesta alluded to, warrants conclusions as to the

lions would not venture. 'Thus, the European tribes as they moved west would be confronted by lions for the first time in the plains, not having seen them in the highlands, as would also be the Persians, who went south-west, and the Hindus, who went south.' (*Bericht über die Thätigkeit der St. Gallischen naturw. Ges.*, 1866, p. 149).

* Recently placed by H. Zimmer (*Altind. Leben*, p. 101, *f.*) rather in the neighbourhood of Cashmere. *Cf.*, on the other hand, W. Geiger, *Ostiran. Cultur*, p. 41.

spread of the most ancient Indo-Europeans in general, and of the Iranians in particular. We see that since the time of Rhode and Lassen (*cf.* above, pp. 6 and 8), the views of enquirers had materially altered on this point. As early as the year 1856, H. Kiepert (in the *Monatsberichten der Berliner Akademie d. W.*, pp. 621-47) had seriously shaken the view, which had its warmest defender in M. Haug, that the first Fargard of the Vendidad was good evidence for the expansion of the Indo-Europeans (*cf.* *The First Chapter of the Vendidad translated and explained* in Bunsen's *Aegyptens Stelle in der Weltgeschichte*, last volume, pp. 101-37). Kiepert points out that however important for history and geography the enumeration of the sixteen districts may be otherwise, it only represents the extent of the geographical knowledge of the author of the Zend Avesta, and that it has absolutely no pretensions to be an account of the wanderings or gradual expansion of the Iranians, or of the Hindo-Persians, or of the Indo-Europeans. This interpretation of the passage, which is undoubtedly the correct one, is shared by other distinguished orientalists such as Max Müller and M. Bréal (Muir, *op. cit.*, pp. 314 and 334); indeed, even Spiegel himself, who in the first volume of his *Avesta*, p. 5, had decided in favour of the view of Rhode and Lassen, in the second volume of his work, p. 109, goes over to the enemy.

However, this one argument could be of but little importance to the Central Asia hypothesis of the origin of the Indo-Europeans. Apart from it, a host of ethnographical, historical, and linguistic arguments seemed to constitute a crushing mass of evidence in its favour. This was the state of things, when suddenly in England the first doubt was cast on the Asiatic origin of the Indo-Europeans—on this hypothesis which had almost attained to historical certainty. R. G. Latham was the man who, in a work abounding in heterodox views (*Elements of Comparative Philology*, London, 1862), repeated and supported with further arguments a view which he had indeed enunciated before (cf. *The Native Races of the Russian Empire*, London, 1854; and still earlier, Latham's edition of *Germania*, 1851, lxvii. p. cxxxviii.), "that the original abode of the Indo-Europeans is rather to be looked for in Europe" (*cf.*, *loc. cit.*, 611, *f.*).

Latham starts from the assumption that Sanskrit is closely connected with the Lithu-Slavonic languages, an assumption which he considers proved, as regards sound-lore in particular, by the facts, which we have already given, with respect to the Indo-Germanic gutturals. Consequently the original position of Sanskrit must have been in contact with that of the Slavo-Lithuanians, and either Sanskrit must have reached India from Europe, or else Lithuanian, Slavonic, Latin, Greek, and German must have reached Europe from Asia. For a decision between these two possibilities, both equally probable in themselves, there is not the least shred of evidence forthcoming. "What I have found in its stead is a tacit assumption that as the East is the probable quarter in which either the human species, or the greater part of our civilisation, originated,

everything came from it." But surely in this there is a confusion between the primary diffusion of mankind over the world at large, and those secondary movements by which, according to even the ordinary hypothesis, the Lithuanic, &c., came from Asia into Europe" (p. 612). The matter reduces itself therefore to a consideration of general probabilities. Now, since Latham proceeds to argue, *a priori* it is probable that the smaller class proceeds from the area of distribution of the greater, and since in natural science it is usual to derive the species from the area of the genus and not the genus from the area of the species, and further, since Teutonic is not derived from English, nor Finnic from Magyar, but the reverse, therefore the starting-point of Sanskrit also must be sought in Europe and on the eastern or south-eastern borders of Lithuanian. Or, as it is put in the edition of *Germania* mentioned above: "When we have two branches, which belong to the same family and are separated from each other, one of which covers a larger area and shows the greater number of varieties, while the other possesses a narrower range and greater homogeneity, it is to be assumed that the latter is derived from the former and not the reverse. To derive the Indo-Europeans of Europe from the Indo-Europeans of Asia is the same thing in etiology as if in herpetology one were to derive the reptiles of Great Britain from those of Ireland."

Equally serious doubts as to the force of the arguments put forward in favour of the Asiatic origin of the Indo-Europeans were expressed in the year 1867 by W. D. Whitney (*Language and the Study of Language*, p. 20, *ff.*; *cf.*, also, 1876, *Life and Growth of Language*, translated by A. Leskien, p. 203). He is of opinion that neither myth, history, nor language, warrant any conclusions whatever as to the situation of the original Indo-Germanic home. Specially incomprehensible is it to him, how anybody could have regarded the geographical reminiscences of the Zend Avesta (*cf.* above, p. 85) as indicating the direction of the Indo-Germanic migrations.*

The ranks of the doubters were joined in the following year by Th. Bentey, who, however, does not share Whitney's sceptical point of view, but takes his stand with decision in favour of deriving the Indo-Europeans from Europe. (*Cf.* Preface to the *Wörterb. der indogr. Grundsprache*, by A. Fick, 1868, p. viii. *ff.*, and *Geschichte der Sprachwissenschaft*, 1869, pp. 597–600). "Since geological investigations," he says, on p. ix. of the Preface, "have made it certain that Europe has been the abode of man for inconceivable ages, all the reasons which have hitherto been regarded as proving that the Indo-Europeans came from Asia, and which really have their basis in the prejudices instilled into us with our earliest education,

* The translator and editor, J. Jolly (1874), on the other hand, expresses himself decidedly in favour of the East as the original home of the Indo-Europeans, especially because of "the ever increasing probability of an original connection between the Indo-Europeans and the Semites" (*cf.* p. 304, *f.*, of the German edition).

fall to the ground." A decisive argument against Asia and for Europe, however, is afforded by certain facts of language: names for the great Asiatic beasts of prey, the lion and tiger, are as conspicuous by their absence from the original Indo-Germanic fauna as is that of the Asiatic beast of transport, the camel. "From the fact," it is added in the *History of the Science of Language* (*Geschichte der Sprachwissenschaft*, p. 600, note), "that the Hindus designate the lion by a word which (*siṁha*) is not formed from an Indo-Germanic root,* and the Greeks by an undoubted loan-word (λις, λεων, from Hebr. *laish*, &c.), it may be inferred that in the original language the lion was known to neither, but that both nations made their acquaintance with it after their separation, and in all probability continued to use the name which had been given to it by the non-Indo-Germanic peoples amongst whom they first became acquainted with it." Benfey holds out the promise of a thorough investigation of the question as to the original home of the Indo-Europeans, but has not yet accomplished it. All that we can learn more precisely from later indications is that (cf. *Allgemeine Zeitung*, 1875, p. 3270) Benfey lays the scene of Indo-Germanic evolution close to the boundaries of Asia, in the country north of the Black Sea, from the mouths of the Danube to the Caspian. In this way the "swamps rich in salt," which occur on the shores of the Aral and the Caspian, would just explain the acquaintance with salt which Benfey ascribes to the original people (*cf.* above, p. 10, *b*).

Latham's and Benfey's polemic against the assumption that the home of the Indo-Europeans is to be sought in Asia, found an eloquent advocate in L. Geiger, who, in an essay written in 1869–70, "*On the Original Abode of the Indo-Europeans* (*Über die Ursitze der Indogermanen*, published in *Zur Entwicklungsgeschichte der Menschheit*, 1871, p. 113, *f.*), endeavours to show that Germany, in particular Central and Western Germany, must be regarded as the original home of the Indo-Europeans. Amongst the arguments which Geiger produces for his hypothesis, a prominent position is taken by the character of the vegetation† in the way of trees, which the original land of the Indo-Europeans is shown to have had. Besides firs, willows, ashes, alders, hazel-shrubs, there are, according to Geiger, three forest-trees especially in the names of which the languages show remarkable agreement: the birch (Sans. *bhûrja*, Lith. *bérzas*, Russ. *bereza*, Germ. *birke*), the beech (Lat. *fagus*, G. φηγός, "oak," Germ. *buche*), and the oak (Sans. *dru*, Goth. *triu*, "tree, timber," G. δρῦς, "oak," O.I. *duir*, ditto). Now, of these trees the beech is to be regarded as peculiarly adapted to determine the original Indo-Germanic home. Since the home of this tree is to be looked for in the west of the Prussian Baltic provinces, while on the other hand, "at the beginning of the Christian era, the beech had not yet reached Holland (*cf.* Geiger, *op. cit.*, p. 136) nor England (Cæsar, *B. G.*, v. 12), and in the

* *Cf.* Part iv. ch. ii. † *Cf.* Part iv. ch. iv.

primeval Indo-Germanic period had not got anything like so far north, we must go south to the region in which this tree can be certainly supposed to have flourished in ancient times, which as regards Germany will take us to about the Thüringerwald." Geiger altogether leaves out of consideration in this conclusion the fact that the name of the beech does not occur amongst the Asiatic Indo-Europeans. The same argument, therefore, is obviously more correctly employed by Fick merely to determine the home of the European members of the Indo-Germanic family (*cf. Wörterbuch*, p. 1047, *f.*).

Another fact which is to bear out Geiger's hypothesis is that the only two kinds of grain which were cultivated in the primeval period were barley and rye. This view is based, as far as rye is concerned, on the O.H.G. *roccо*, Pr. *rugis*, Lith. *rugei*, Russ. *rozi*, &c., which in accordance with Grimm and Pictet is compared with Sans. *vrîhi*, "rice." That the original meaning, however, of this series of words was "rye," follows from the fact that the North European languages agree as to the meaning both with each other and with the Thracian *βόλιζα* (*Galenus de alim. facult.*, i. 13). "A soil on which rye and barley flourish but not wheat can only be looked for in the north of Europe; but for a very early age a more southern zone also must undoubtedly be excluded from the cultivation of wheat" (p. 140).

Highly prized, too, in the original Indo-Germanic period, according to Geiger, was "the genuinely European colouring plant," woad (G. *isatis*, Lat. *vitrum*, Teut. *waid*, from *waisd*), which the Indo-Europeans used for tattooing the body, an idea to which Geiger is led by Cæsar's notice (*B. G.*, v. 14) of the ancient Britons: *se vitro inficiunt, quod cæruleum efficit colorem.**

A further argument in favour of Germany, in our author's eyes, is what Pictet had already pointed out, viz., that the Indo-Germanic languages possess identical names only for spring, summer, and winter, but not for autumn. Now since, according to Tacitus, Germ. *hiems et ver et aestas intellectum ac vocabula habent, autumni perinde nomen ac bona ignorantur*, the following inference is drawn: "On the strength of this noteworthy passage, we will venture to say: if the abode of the original Indo-Germanic people was not Germany, then at any rate as regards temperature and the effect produced by the seasons, it must have been exactly like the Germany of Tacitus" (p. 146).

The fauna of the primeval period, too, was of a northern character. The sea was perhaps known to the Indo-Europeans only by hearsay, and Geiger does not make them dwell in its neighbourhood. Their want of familiarity with it is shown by the absence of a common name for salt, for mussel, oysters, sails, varieties of fish (except the names for the eel), &c.

Finally, let us mention that the light-complexioned type of

* The subject of the tattooing of the body by the Indo-Europeans is discussed at greater length, both as regards the process itself and the evidence of language for it, by Geiger in *Zur Entwicklungsgeschichte der Menschheit*, p. 71, *f.*

man, which is claimed as the original Indo-Germanic type, and which is seen most clearly amongst the Teutons, is supposed to point to Germany as the original home of the Indo-Europeans.

In the same year in which Geiger's work appeared, J. C. Cuno also offered his opposition (*Forschungen im Gebiete der alten Völkerkunde*, I. *Teil: Die Scythen*) to the dominant theory of the Central Asiatic origin of the Indo-Europeans. Cuno starts from the assumption that the original Indo-Germanic people must have numbered many millions, a view to which he is led by his absolutely unique interpretation of the kinship of the Indo-Germanic languages and its causes. He does not explain it by the assumption of a common derivation of the Indo-Germanic languages from one and the same original language. His view is that over the whole extent of a great and homogeneous area idioms different from each other from the very beginning grew up, having more or less likeness to each other. Consequently he sees in "the more deep-seated differences between the individual members of the Indo-Germanic family," not "modifications of what was once identical," but "independent species of the same genus" (p. 67). Under these circumstances the question for him is "to find an extensive area, habitable throughout, as homogeneous as possible as regards geography and climate, containing no "people-sheds" within its limits, and such, therefore, that in it a homogeneous people could take its rise and have an organic growth" (p. 31). Such an area in Cuno's opinion occurs but in one place on our planet, and it includes the east of Europe, Northern Germany and the north and west of France, *i.e.*, the whole enormous tract of land between lat. 45 and 60, extending from the Ural to the Atlantic Ocean. If the Lithuanians, Slavs, Teutons, and Celts, in this way, are the original inhabitants of the lands they now occupy, the original home of the Greeks no less, as their myths and language indicate, must be looked for in the north and in the neighbourhood of the Lithuanians. This follows; not only from what is said by Herodotus (iv. 108), who knows of a town of the Geloni in the land of the Budini* possessing a Greek cult and language, but especially from the close affinity which Cuno asserts exists between Greek and Lithuanian (pp. 42–45).†

In favour of his hypothesis of the origin of the Indo-Europeans, Cuno has another argument, which the science of language seems to him to offer of itself. "If the original home of the people and language of the Indo-Europeans is the lowland and mountain

* *Cf.* Kiepert, *Lehrbuch d. alten Geographie*, p. 342.

† As we shall not return to this subject, we may as well say here that the arguments brought forward by Cuno to show the close kinship of Lithuanian and Greek, from their very nature can prove absolutely nothing. The grammatical points of agreement between Greek and Lithuanian, which Cuno produces, either are to be found in, or may with certainty be inferred of, other languages also (Lith. *wilkūn* = λύκων, but also Slav. *vlŭkŭ* and Goth. *vulfé* = *vlŭk-âm* and *vulf-âm*; Lith. *dŭ-sin* = δώσω, but also Irish *fortias*, *tiasu*: *fortiagaim*, &c.). Nowhere is an attempt made to discover any new formations peculiar to the two languages. As for what Herodotus says, the historian himself explains the Geloni as descendants of Greek refugees from the Pontic emporia.

spurs of Central and Eastern Europe, if language and people had their origin there, then there must be numerous points of contact between the Indo-Germanic family of languages and its immediate neighbour, the Finnic family" (p. 50). And as a matter of fact Geno contrives to collect, in the way of numerals, pronouns, and names of kin, a whole heap of Finno-Indo-Germanic equivalents, which, according to him, cannot be due to borrowing, but must have been the common property of the two languages at the time of their origin. As, now, it follows that the Finnic and Indo-Germanic families of language were neighbours from the beginning, and as, on the other hand, it would be absurd to assume that the Finns and Indo-Europeans, for instance, undertook a joint emigration from Asia, the certain inference is "that the primeval Indo-Europeans lived then, where the main body of them are to be found at the present day, and that the movements which took place were from South-East Russia through the Turanian steppes to Persia, and not, reversely, to South-East Russia."

Whatever may be our opinion about the arguments alleged in support of deriving the Indo-Europeans from Europe, the fact is to be noted that the demurrers of the scholars mentioned gave the most violent shock to the sway of the dominant hypothesis of the Asiatic origin of the Indo-Europeans. The last twenty years, therefore, may be justly termed a period of struggle, as between the two conflicting views.

We now pass to those investigators who endeavoured to maintain the older thesis, and to support it from new points of view.

Amongst them the first in point of time to mention is A. Fick, who in the second edition of his *Comparative Dictionary* (1870–71), with a tacit protest against Benfey's remarks in the first edition, places the home of the Indo-Europeans in the wide district of Turania, "between the Ural, Bolor, and Hindu Kusch."

A real polemic against the adherents of the new teaching was first begun by A. Hofer (*K. Z.*, xx. pp. 379–84, *Die Heimat des indog. Urvolkes*). The venerable scholar who helped to lay the foundation of Comparative Philology in Germany, can only understand the new teaching "as due to the endeavour of modern science" to give a firm basis all at once to any theory "even if only by way of experiment, and as it were for the sake of a change." But though he passes sentence on the arguments adduced in favour of Europe from this point of view, the solitary argument which seems to him conclusive in favour of the Asiatic home of the Indo-Europeans is that Sanskrit and Zend, having preserved the purest and most primitive forms, must, therefore, have remained in the closest proximity to the original Indo-Germanic abode.*

To refute a single one of the reasons alleged against the derivation of the Indo-Europeans from Asia was the object of Carl

* As against this argument Whitney had even in 1867 (*Language and the Study of Language*) pointed on the one hand to Armenian, and on the other to Lithuanian and Icelandic, which are absolutely inconsistent with it.

Pauli in a special paper, *The Name of the Lion amongst the Indo-Europeans* (*Die Benennung des Löwen bei den Indogermanen, ein Beitrag zur Lösung der Streitfrage über die Heimat des indog. Volkes*, Münden, 1875). Hitherto the general tendency had been to follow Benfey's opinion (cf. *Griech. Wurzellexicon*, ii. 1, and above, p. 87), that the agreement of the European names for the lion was due to borrowing, that the Slavo-Lithuanian forms (Zemaitic *lëwas*, O.S. *livŭ*) were borrowed from the German (O.H.G. *lewo*), the German from the Latin (*leo*), the Latin from the Greek (λέων, λῖς), the Greek from the Semitic (Hebr. *laish*). Pauli, on the other hand, traces all these different forms of the lion's name back to no less than seven "ethnic" fundamental forms (*laivant*, *laivantja*, &c.), which are all supposed to have proceeded from a "pro-ethnic" substantive root, *liv*, "pale yellow" (Lat. *livor*, *lividus*). The form of this substantive root *liv* is given on the one hand by the G. λῖς, on the other by the Lithuanian form *lëtas*, "lion" (*liv* as *sūtas*, "sewn"; *siv*), which disposes of the entire theory of borrowing.*

After all, however, granting the correctness of all these assumptions and inferences, we can only infer, as Pauli himself recognises, that there were lions in the original home of the Indo-Europeans. The business of the advocates of a European home for the Indo-Europeans would then at once be to demonstrate the existence of lions in Europe for early ages, a task which a well-known passage of Herodotus (vii. 125) seems to render by no means impossible.

The difficulty of producing the lion as a witness for any hypothesis whatever as to the home of the Indo-Europeans, is on the whole rightly insisted on by Hans von Wolzogen (*Zeitschrift für Völkerpsychologie und Sprachw.*, viii. p. 206, *f.*). In its place, however, he contrives to produce a new "demonstration" of the Asiatic home of the Indo-Europeans, derived this time from mythology. Wolzogen starts from the well-known ancient Hindu myth of Indra's conflict with Vritra or Ahi, the fire-breathing dragons, which have driven off the milk-giving cows. This myth is rightly interpreted as a conflict with the scorching heat of summer, which holds the rain clouds captive. Now, as our author traces the myth amongst kindred nations, especially the Greeks and Germans, he comes to the following conclusion: "I found the idea of the fire-breathing dragon employed in the extremest north as the mythical representation of the winter's cold, defeated by the sun-hero (Siegfried and Fafnir, Siegfried and Brunhild, who is surrounded by the burning brake), and the same idea employed in the warm south as the mythical representation of the parching heat of

* Recently, however, A. Brückner, *Die slavischen Fremdwörter im Litauischen*, 1877, p. 105, has conjectured that Lith. *lëtas*, "lion," which only occurs in märchen, is borrowed from the white Russian *ljútyj*, "the evil one" (in märchen, *ljúta* designates the dragon). Lith. *lëvas*, *liúvas*, would be also derived from the Polish *lew*, *lwica* (p. 103).

See on the whole lion-question, part iv. ch. ii.

the sun, from which the earth is rescued by the god of the thunder-storm. Obviously the latter idea being the more natural is the earlier, while the former, which seems almost contradictory to reason, is only a traditional idea, the thing symbolised having entirely changed. If this was correct, it was obvious that the nations, amongst whom this mythical idea survived, had come from the country in which the idea did correspond exactly to the thing. By this, however, in my opinion, the Asiatic home of the Indo-Europeans was demonstrated. The whole tendency of this, though not expressed, is obviously to make India the home of the Indo-Europeans.

An extremely energetic advocate of the Asiatic hypothesis was now found in no less a person than Victor Hehn. In his short paper, *Salt* (*Das Salz*, 1873), he defends the view which we have seen to be well founded that the equation Lat. *sal*, G. ἅλς, &c., is by no means Indo-Germanic, but is limited to the European languages. From this Hehn draws the conclusion, p. 16, that the Indo-Europeans, "when they were tending their flocks in their original abode on the crest and the slopes of the mighty Bolurtagh, as it stretches along the meridian," knew nothing of salt. It was the western members of the primeval people, who marched towards the setting sun, and, when they came to the steppes of the Aral and the Caspian, abounding in salt swamps and half-dry salt lakes, found a name for the hitherto unknown mineral. Of their further wanderings Hehn also gives an attractive picture which may be appended in a note.*

V. Hehn availed himself of the second edition of the *Culturpflanzen und Haustiere* (1874) to pour ridicule and censure on the adherents of the European hypothesis. "So it fell out," he says, in the Preface, p. viii., "that in England, the land of oddities, an original took it into his head to place the primitive abode of the Indo-Europeans in Europe; a Göttingen professor from some whim or other appropriated the discovery, an ingenious dilettante of Frankfurt laid the cradle of the Aryan family at the foot of the Taunus,

* "Their further wanderings led them from the depression of the Aral and the Caspian, by the way which has been appointed for the nations by nature herself—through the South Russian steppes, on the north of which began dense forests of firs, while on the slope of the Carpathians was a luxuriant, impenetrable growth of foliaceous trees. Here, where the mountains have their out-posts, a division took place: along the Black Sea, and the lower Danube, where pasture-land continues, went the bands which later became the Pelasgo-Hellenes and Italians, Thracians, and Illyrians; in modern Poland, by the Baltic, through the tremendous plain, which stretches as far as Holland, spread the subsequent Celts, who also crossed the Channel to the British Islands, the subsequent Teutons who reached Scandinavia by the Belt and the Sound, and finally, the Lithuanians and Slavs, the last stragglers, who remained in closest proximity to the point of separation. In the rear of the emigrants, on the immeasurable plains which they had evacuated, poured the Persian stream, from the Massagetæ and Saca to the Sarmatæ and Scyths, the Jazygæ, and Alanæ; while south of the Caspian, as far as Asia Minor, another arm of this Persian flood divided the compact mass of the Semites, and sent its larger half south, while some of its advanced posts even reached the Propontis and the Aegean." *Das Salz*, pp. 21 and 22.

and painted in the scenery." He then gives the reasons for this dogmatic deliverance. "They are, it must be confessed, the very identical reasons which we have frequently met in the older investigators who argued for Asia, from Pott (*cf.* above, p. 7), nay! even from Adelung, onwards. "According to this, therefore, Asia, that enormous quarter of the globe, the *officina gentium*, received a great part of its population from one of its own projections, niggardly endowed by nature, a small peninsula, jutting out into the ocean. All (!) other movements of which history knows are from east to west, and brought new forms of life, though also destruction, to the west; only this, the oldest and the greatest, went in the opposite direction and inundated steppes and wildernesses, mountains and sunny lands, to an enormous extent. And the scene of our first *origines*, to which we are carried back by dim memories, as to the childhood of our race, the scene of the first stirrings, and yet uncertain steps of human activity, where as we instinctively feel, Aryans and Semites dwelt side by side, nay! perhaps were one, lay, not at the sources of the Oxus, by the Asiatic Taurus or the Indian Caucasus, but in the swampy, pathless, trackless forests of Germany, traversed but by the eland and the aurochs. And the oldest form of speech we are no longer to look for in the monuments of India and Bactria—since the nations only arrived here after a long and demoralising journey—we hear its jangle in the mouths of the Celts and the Teutons, who remained inert and impassive in the place of their birth."

We ought, however, to mention that the preface containing these remarks is not to be found in the last editions of Hehn's work.

The greatest historian of culture was followed in his decision in favour of the Asiatic derivation of the Indo-Europeans by the most distinguished representative of historical geography in Germany, H. Kiepert. In the extraordinary length of the area occupied by the Indo-Europeans, especially before the expansion of the Teutons and Slavs northwards, Kiepert (*cf. Lehrbuch der alten Geographie*, 1878, p. 23, *f.*) sees an indication that the expansion of the Indo-Europeans probably followed the direction of the length of this area. That this expansion took place from east to west and not in the opposite direction, is supported in his opinion by "the general analogy" of other movements. The dividing point of the Hindu-Persians, at any rate, was certainly at the eastern end of the Indo-Europeans' historical area of distribution in the valleys of the Indus and Oxus.

As regards the rest of the movement, Kiepert is of opinion that the mass of the Indo-Europeans followed the direction of the Taurus range, and separated for the first time in Western Asia, into a half north of the Caucasus and another south of it. He also considers it probable that the European branch dwelt as a compact mass in Central Europe for a time, "since even in the most ancient times they had much more complete possession of the centre and

in the west, of the north of this quarter of the globe than they had of the southern peninsulas." The extension of the Italian and Greek tribes from the north to the south can be traced in periods of which we have historical knowledge. The first tribes to migrate from Central to Southern Europe were the Illyrians (the last remains of whom are the modern Albanians) and Ligurians, the former of whom were subsequently broken through by the Greeks, the latter by the Italians.

A revival of interest in the investigation of the original Indo-European home seems to have been provoked in France by the second edition of the *Origines Indo-Européennes* of A. Pictet, 2 vols., 1877. The author's views and arguments to prove Bactria to be the original country of the Indo-Europeans, remain still the same as we have already set them forth above (*cf.* p. 80).* We need not therefore dwell on it. In the year 1879 the Paris Anthropological Society took up the question of the original home and original physical type of the Indo-Europeans, without, however, establishing any definite results. There resulted, however, from these proceedings † a work by C. A. Piétrement, *Les Aryas et leur première patrie* (*Revue de linguistique et de philologie comparée*, April 1879, and published separately, Orléans and Paris), for whom it was reserved to refer our forefathers to a place, their departure from which certainly calls for no explanation—that is Siberia. Piétrement starts from the *Airyana Vaêjanh* of the Vendidad, to which (quite arbitrarily) he refers a passage in the *Bundehesh* (*cf.* xxv.), in which it is said:—"There the longest summer day is equal to the two shortest days of winter, the longest winter night is equal to two summer nights." Now the only latitude which suits this description is lat. 49° 20', which in Central Asia would take us to the district of Alatau, in Russian Turkestan. This original idea is then supported by an argument taken from A. Pictet, who, as we

* Throughout the second edition, I will here remark, Pictet in almost all points stands by his main conclusions, as a simple glance at the chapter *Résumé général et Conclusions*, suffices to show, for it is word for word identical in the two editions. This, however, cannot excite surprise, for Pictet remains precisely the same as regards his methods. Unfortunately the author died too soon to defend and justify in an ample preface his standpoint against the wicked *savants d'outre Rhin, vrais gladiateurs de la république des lettres*—to borrow the flattering appellations used by the editors of the posthumous work. But in the second edition also, Pictet assigns far too little weight to the agreement of equations in their grammatical form; and we still meet at almost every step the uncritical employment of Sanskrit which we have characterised above. What difficulty Pictet has in parting from the unsafest of Sanskrit words is shown, for example, by the fact that on i.² p. 331, he still continues to hope that the supplement to the St. Petersburg dictionary will produce the alleged Sans. *arbha*, "grass," alluded to above (p. 20), all in vain.

Nevertheless, it must not be denied that Pictet has purified his work in many points. Warm recognition is deserved not only by many a happy stroke in etymology, but also by the extraordinarily wide reading which Pictet shows in the literature of his subject. On the whole, it may be said of the second edition of the *Origines* as of the first, that the professed student of language cannot read it without being frequently stimulated, but the anthropologist and historian of culture may be led into gruesome errors by it.

† On which see Penka, *Origines Ariacæ*, pp. 9, 11.

have seen above, endeavours to show that the Indo-Europeans were acquainted with the sea, and that a sea to the west of them, only this western sea is not as Pictet made out, the Caspian, but the Balkach in Siberia. Finally, the *Hara Berezaiti* of the Avesta is to represent the summit of the Alatau range.

However, this hypothesis of Pietrement's obtained no recognition whatever in France; on the contrary, it was vigorously combated in two special essays, first by Arcelin in *L'Origine des Aryas* (*Revue des Questions Scientifiques*, Janvier, 1880, p. 331), secondly by De Harlez (*Les Aryas et leur première patrie. Réfutation de M. Pietrement*). "L'Avesta," the well-known Zend scholar, concludes by very justly saying, "ne peut fournir aucune renseignement précis relativement à la patrie primitive des Aryas. Tout y est érenian ou éranisé; tout même y est approprié au zoroastisme; c'est à dire au dualisme mazdéen. On pourrait y découvrir peut-être l'indication de l'Éran primitif; mais on y chercherait en vain celle de la patrie des premiers Aryas asiatiques, bien plus vainement encore celle des Aryas primitifs."

The three works last mentioned I have not seen for myself. They are known to me only from the analysis given of them by J. van den Gheyn in a careful little paper, *Le berceau des Aryas, étude de géographique historique*, Bruxelles, 1881. Van den Gheyn in this paper, which falls into five chapters (I. *Hypothèses tirées des traditions avestiques*; II. *Systèmes fondés sur les traditions indiennes*; III. *La philologie comparée et l'opinion de Pictet*; IV. *Théorie de l'origine européenne des Aryas*; V. *Explorations géographiques dans l'Asie centrale*), treats almost exclusively of the history of the question as to the original home of the Indo-Europeans (with extracts), without concealing his own inclination for Central Asia and Bactria, to the latter of which he sees himself drawn by A. Pictet, whose importance and method he much overrates (p. 65). The final solution of the question in dispute, Van den Gheyn hopes for from a more careful investigation of the ethnology and geography of Central Asia. The information on these points constitutes the most valuable portion of the little work, which is continued in two papers: *Les Migrations des Aryas* (*Extrait des Bulletins de la Société royale de Géographie d'Anvers*, 1882), and *Le séjour de l'humanité postdiluvienne* (*Extrait de la Revue des Questions Scientifiques*, 1883).

The attempts to demonstrate the Asiatic origin of the Indo-Europeans, which we have reviewed thus far, are based essentially on the culture, languages, and relations of the Indo-European peoples themselves. We have now to make mention of a mode of argument which appears to lead to the same conclusion by establishing apparently a closer connection between the Indo-Europeans and another family of languages and peoples.

In researches as to the original home of the Indo-Europeans, we have frequently (*cf.* pp. 9, 86) come across the idea that the Indo-Europeans must have migrated from Asia into Europe, and not the other way, because affinity of language connects them with

the other main branch of the white race, whose original abode, however, nobody would think of looking for in Europe—the Semites.

This assumption of an original connection and kinship between the Semites and the Indo-Europeans must, however, in spite of F. Delitzch (*Studien über indogermanisch-semitische Wurzelverwandtschaft*, Leipzig, 1873, where, pp. 3–21, a summary of the history of this important controversy is given), still be designated as baseless, or at least, as premature[*] at the present day, and so the state of the primitive Semites would have little interest for Indo-European studies, were it not that attempts have recently been made to bring the original homes of the Semites and the Indo-Europeans together in another way. Whereas, according to the views of distinguished Semitic scholars, (E. Schrader and Sprenger), the starting-point of the Semitic peoples was to be placed to the south of their historical area of distribution, in the direction of Arabia, A. V. Kremer tries, in the essay already quoted, *The Loans of Semitic Culture in the Plant and Animal Kingdoms* (*Semitische Culturentlehnungen aus dem Tier- und Pflanzenreiche*), by combining Comparative Philology with investigations into the geography of animals and plants, to make out that the migration of the Semites into the lands they now occupy must have been from the north. A comparison of the Semitic languages, as regards the names of their flora and fauna, shows (1) that the Semites were acquainted with the camel before their dispersion, and (2) that at this time the palm and the ostrich were unknown to them, which yet, on the assumption that Arabia was the original home of the Semites, could not fail to have been known to them. "The land, however," he proceeds, "in which the palm and the ostrich are wanting, but the camel has been native since primeval times, can only be looked for in the immeasurable plateaux of Central Asia, which lie west of the Panûr terrace, between the Oxus and the Jaxartes, and have been designated by a completely unprejudiced naturalist (Schmarda, *Geograph. Verbreitung der Tiere*) as the centre from which the *Species equina* was propagated." Here began the migration of the Semites, which at first followed the course of the Oxus in a south-west direction, skirted the southern shores of the Caspian, proceeded into Media by one of the passes of the Elburz, and thence "through the gorge of Holwân, the passage of all peoples to and from Media," into the deep basin of the Assyrian and Mesopotamian depression, where the differentiation of the Semitic peoples was gradually effected.

Kremer's arguments are followed, with corrections and additions, by Fritz Hommel, both in his essay, *The Original Abode of the Semites* (*Die ursprünglichen Wohnsitze der Semiten*, Beilage z. Allg.

[*] What Ascoli (*Kritische Studien zur Sprachwissenschaft*, Weimar, 1878, xxxiv., note 11) says on the morphological analysis of the Semitic roots, the triliteral character of which is the greatest obstacle to their comparison with Indo-European roots, is very remarkable.

Zeitung, 1878, No. 263), and in his work, *The Names of the Mammals amongst the Southern Semites* (*Die Namen der Säugetiere bei den südsemitischen Völkern.*, 1879, p. 406, *f.*).

His object above all is "to show, in the original Semitic fauna, the existence of animals which either have never been in Arabia, or at least only occur in quite isolated instances." In this class he ranks the original Semitic names for the bear (*dubbu*), the wild-ox (*rîmu*), the panther (*namiru*). He allows only a secondary weight to the absence, from the original Semitic fauna, of the names of such animals as are peculiar to the fauna of Arabia, such as the ostrich, jerboa, and lynx of the desert, for "it may be only accident that the word in question survives in some Semitic languages, but has been lost in others and then replaced, usually by new words, the work of other tribes."

The way in which the various Semitic peoples branched off from the original stock is conceived by F. Hommel (cf. *Die Sprachgeschichtliche Stellung des Babylonisch Assyrischen S. A.*) as follows:— From original Semitic (I.) in very early times the Babylonian-Assyrian detached itself, while Syrian, Phenician, and Arabic (original Semitic, II.) remained united for some considerable time. This follows not only from a consideration of the Semitic perfect tense, but also from the names of the vine, olive and fig trees, date-palm and camel, which coincide only in original Semitic (II.). Finally, the Syro-Phenician-Arabians, still undistinguished, settled in Mesopotamia. Here the domestication of the date-palm, hitherto only known as a wild variety, took place.

Although, therefore, Hommel will only go as far as Mesopotamia, by this route, for the last halt of the original Semites before their dispersion, still he adopts Kremer's views as to the prehistoric migration of the Semites from Central Asia into the land of the two rivers, mainly because he regards primeval contact between the Indo-Europeans and Semites, whom, however, he does not think to be connected by affinity of language, as demonstrated by a series of civilised terms common to both families of speech and peoples (*cf.* above, p. 75). These civilised concepts, common to the original Semites and original Indo-Europeans, in the sense that they were borrowed by one from the other, Hommel has discussed more thoroughly in a very interesting essay, *Aryans and Semites* (*Arier und Semiten*, Correspondenz Blatt der deutschen Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte, 1879, Nos. 7 and 8). They are in his opinion as follow:—

	Orig. Indo-G.	Orig. Semit.	Meaning.
1. and 2.	*staura*	*tawru*	steer
	karha	*karnu*	the steer's weapon, the horn
3.	*laiwa, liw*	*labi'atu*	lion
		lib'atu	
4.	*gharata*	*harâdu*	gold
5.	*sirpara*	*sarpu*	silver
6.	*waina*	*wainu*	vine

To this view Hommel still holds in all essentials (*Neue Werke*

über die Urheimat der Indogermanen, *Archiv f. Anthrop.*, xv. Suppl. 163, *ff.*). He lays especial weight on the agreement between the original Semitic (Hi) *wainu* with the G. Foῖνος, Lat. *vinum*, Alb. *vene*. This word was learnt from a common source by the western Indo-Europeans, as on their journey from the interior of Asia, they passed to the north of the Caucasus, a land of wine from of old, and by the Semites when they, also on the road from the interior of Asia, settled after the departure of the Babylonians to the south of those mountains.

Against these hypotheses of Kremer and Hommel, which would place the original home of the Semites to the north, it must be remarked that other scholars have by no means given up the belief in the Arabian origin of this race. *Cf.*, *e.g.*, E. Meyer, *Geschichte des Altertums*, i. 208.

Thus, though there was an imposing list of *savants*, who adhered to the hypothesis of the Asiatic origin of the Indo-Europeans, still serious doubts continued to exist as to it; and as well as the "English original," the "whimsical professor," and "the ingenious dilettante," there were some investigators, of good repute, who either desired to see the original Indo-Germanic home absolutely placed in Europe, or who at least endeavoured to show the nullity of the arguments adduced in favour of Asia.

Anthropological research, again, which was steadily extending its borders, supported the new theory with much enthusiasm, as we shall see.

Let us here first name the well-known ethnologist and student of language, Friedrich Müller (*cf.* E. Behm, *Geographisches Jahrbuch*, iv., 1872; *Probleme der linguistischen Ethnographie und Allgemeine Ethnographie*, 1873, p. 69). Müller fully agrees with the reasons which, as we have seen, were given by Benfey and Geiger in favour of Europe as the original home of the Indo-Europeans; and, with Benfey, lays the scene of the parting of the Indo-Germanic peoples in South-Eastern Europe. Only he will not allow the Indo-Europeans to pass as autochthones even of this country. Rather, they migrated hither at an inconceivably early period from the high lands of Armenia. This assumption is necessarily required by the racial identity of the Indo-Europeans with the Hamo-Semites and the Caucasians.*

The grounds on which the Asiatic hypothesis rests have been most thoroughly illumined by Friederich Spiegel (cf. *Ausland*, 1869, p. 282, *f.*; *Ausland*, 1871, p. 553, *f.*; *Das Urland der Indogermanen*, *Ausland*, 1872, p. 961, *f.*; *Eranische Alterthumskunde*, i. 1871, p. 426, *f.*). To bring out only what is most important in these instructive essays, Spiegel also, as we have seen above, is of

* Armenia's claims to be the original home of the Indo-Europeans, were later supported by H. Brunnhofer (*Ueber den Ursitz der Indog.*, Basel, 1884). He starts particularly from the names for rivers, Kur and Araxes, which are so widely distributed over Indo-European territory: their origin can only be looked for in Armenia, where the two rivers appear in brotherly unity. Cf. *Vj. Lit. Centr.*, 1885, No. 18.

opinion that in the first chapter of the Vendidad there is absolutely no question of migration, and that in the *Yima* (*Dschemschid*) of the second chapter we have a purely mythical personage. The *Airyana Vaêjahk* Spiegel would rather look for in the north of Atropatana. With especial thoroughness our author illumines the raid on the Græco-Bactrian kingdom, made in the second century before Christ by the *Yuëti*, who are mentioned in Chinese authorities, and whose movements were construed by earlier students (*cf.* above, p. 9), as the last waves of the flood of Indo-Europeans from Central Asia, while their later name of *Yeta* was interpreted as *Gete* or *Goths*. Against this, attention is rightly called to the fact that the *Yuëti* were regarded as Thibetans by the Chinese themselves, and that the *Usun*, whose blue eyes and fair beards, according to the Chinese accounts, gave the first occasion to the hypothesis, had nothing to do with the destruction of the Græco-Bactrian kingdom, but remained quiet in their abodes in Dsungarei. Equally little can the Tadschiks of Khashgar and Jarkand, who speak Persian, and practise agriculture, prove, according to Spiegel, in favour of the Central Asiatic hypothesis; for everything indicates that these Tadschiks have spread from Persia northwards.

The argument derived from the more primitive character of ancient Sanskrit and Persian, with regard to the home of the Indo-Europeans, is rejected by Spiegel on the same grounds as by Whitney.

What is, however, especially insisted upon is that the elevated plateau of Pamir, which has lately been claimed, particularly by Monier Williams (*Nineteenth Century*, 1881; *cf.* Van den Gheyn, *op. cit.*, p. 26), as the original home of the Indo-Europeans, being elevated 15,000 above the sea level, and being surrounded by mountains about 7000 higher still, is no fitting place of abode for a primitive people. "And how could that district have contrived to hold the countless hosts which we must suppose to have existed, if we assume that this mass of Indo-Europeans not only wrested Iran, together with a large portion of India and of Europe, from their original inhabitants, but also settled these tremendous tracts of land, and assimilated the subjugated natives so thoroughly that scarce a trace of their nationality is left behind?"* Now, though, on the other hand, Spiegel will only allow the derivation of the Indo-Europeans from Europe to be a hypothesis, he is of opinion that Southern Europe between lat. 45 and lat. 60 appears to be fit for a primitive people. In this low-lying country, traversed only by inconsiderable hills, wheat and rye flourish excellently, in

* *Cf.* also Van den Gheyn, *Le Berceau des Aryas*, p. 28: "Nous pouvons bien accorder que les Aryas primitifs étaient repandus dans les contrées avoisinant le Pamir; mais il nous sera toujours difficile d'admettre que sur ce plateau si déshérité une race ait pue développer. Cette manière de voir est confirmée par les récits de tous les voyageurs modernes." And by the same author:—*Nouvelles Recherches sur le Berceau des Aryas* (*Extrait de la Revue Précis historiques*, 1882), and *Le Plateau de Pamir d'après les récentes explorations* (*Extrait de la Revue des Questions Scientifiques*, 1883).

a climate which on the whole is uniform. From this centre, too, it is easiest to conceive the expansion of the Indo-Europeans east and west, in which migrations, in the proper sense of the term, played a relatively unimportant part. "As the original Indo-Germanic people," he says, in *Ausland*, 1871, p. 557, "expanded more and more, and not only absorbed other peoples at various points on its borders, but also appropriated their ways of looking at things, differences could not but arise, which first showed themselves in the formation of dialects; in the course of time these dialects achieved an independent existence, which, in the absence of a written language, and owing to the limited intercourse with the other branches, especially the more remote, took ever deeper root, and finally completely dissevered the separate members from the original mother."

Theodor Pösche in his book, *The Aryans* (*Die Arier, ein Beitrag zur historischen Anthropologie*, Jena, 1878, pp. 58–74), tries to point out a precise and definite spot as the home of the Indo-Europeans, and like Cuno, finds it in East Europe. The place of their origin is located by him to the south of the West Russian ridge of land, in a district traversed by the Pripet, the Beresina, and the Dnieper, in the enormous wide-spreading marshes of Pinsk. This marvellous hypothesis is based essentially on a physiological argument. In this district, according to the communications of a Russian savant* (*cf.* p. 67), the phenomenon of depigmentation or albinism is of extremely common occurrence, and is clearly marked in men, animals, and plants. Only in such a locality, however, is it possible to conceive the origin of the great blonde race of mankind, that is, according to Pösche, of the Indo-Europeans. This prehistoric sojourn in the swamps would also explain the tendency which occurs amongst the most ancient Indo-Europeans in Switzerland, Italy, &c., to erect their huts on piles, even when the nature of the soil did not require it. A north-eastern rather than a south-eastern locality in Europe seems to him to be indicated as the original abode of the Indo-Europeans, not only by the fact that of all living Indo-European languages Lithuanian possesses "the greatest antiquity," but also by the circumstance that the art of riding is demonstrably of relatively late date amongst the Indo-Europeans. "If, now, we push the original home nearer to the steppes of the south-east, acquaintance must early have been made with the Mongol Turkish tribes, the oldest riders

* Mainow at the International Congress of Geographers at Paris, 1875 (*Archiv für Anthropologie*, viii. p. 3). It deserves to be noted that V. Fischer, whose thorough account of the Pinsk swamps (*Mittheil. der naturf. Gesellsch. in Bern*, 1843–44) is given by Pösche, knows nothing of albinism in this neighbourhood. He only speaks of the frequency of "plica." Naturally, Pösche hastens to conjecture a connection between albinism and "plica." [Plica is a disease peculiar to Poland and district; it is a kind of matting of the hair (zopf), which becomes so much part of the head that when cut it produces bleeding: the nerves of the head grow into the hair. It arises from dust and neglect.—Note communicated by Mr H. de B. Gibbins.—Tr.]

known, and then riding would date much further back amongst the Aryans than it does" (p. 73).

Pösche's work met with very various verdicts from the press. Whereas the extreme and undeniable defects of the work in its philology, which showed an acquaintance with nothing further than Grimm, were criticised very unfavourably by philologists (*cf. Litterar. Centralblatt*, 1878, p. 1221, *f.*), by the anthropologists Pösche's views were welcomed with joy. In this sense, A. Ecker expresses himself (*Archiv für Antropologie*, i. p. 365, *f.*). He does not conceal his suspicion of the plica-plagued, cockroach race of Indo-Europeans, and their origin in the swamps of Pinsk, but he is of opinion that the following two propositions in Pösche's book mark a great advance in science.

1. That the blondes, whether called Aryans (as by Pösche) or simply, as I (Ecker) should prefer, blondes (*Xanthochroi*), form a distinct, well-marked race of man; and

2. That the home of this race is to be sought not in Asia but in East Europe.

Lindenschmit also (*Handbuch der deutschen Altertumskunde*, i., 1880, Introduction), one of the most respected anthropologists and antiquaries of Germany, expressed himself to the effect that the original type of the Indo-European race was certainly not to be looked for amongst Asiatic peoples. "Even in the present undeveloped stage of research as to the races and families of man we may regard this much as certain: that if an original connection between the peoples of the east and of the west, whose languages are related, necessarily implies agreement in physical development, the original type is certainly not to be looked for amongst the Hindus and Tadschiks, Buchars and Beloochees, Parsees and Ossetes." For the rest, Lindenschmit agrees with Benfey that the Indo-Germanic vocabulary, because of the absence of a common name for the elephant, the camel, the lion, and the tiger, is marked by "no unconditionally oriental character." Further, whereas the supposed migration of the Indo-Europeans to the west lacks all historical support, the prime impact in the migrations of the Indo-Europeans is shown by indubitable facts of history to have been eastwards and southwards. Among these facts he reckons the raid of western peoples against Egypt in the fourteenth century, mentioned in the Karnak inscription; the migration of the Celts in the direction of Germany, Italy, Greece, and Asia Minor; the raids of the Scyths on Asia Minor and Persia (*cf.* Spiegel, *Ausland*, 1871, p. 557); the Goths' story of their migrations from the Baltic countries to those of the Euxine, and many others. This power of expansion, moreover, has persisted among the Indo-Europeans of Europe to the present day, whereas the tribes "pushed into Asia and India" have amalgamated with other tribes until they are past recognition. "Such length of life, such indestructible vitality, are so little to be found in Asiatic peoples of kindred speech, that in the question where to look for the strongest, oldest, and deepest roots of the common stock, the weight of facts cannot but give an

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unconditional decision in favour of the western quarter of the globe."

So, too, R. Virchow, who, in his lecture "On the Original Population of Europe" (*Die Urbevölkerung Europas*, 1874), had insisted very decidedly "that all European races, sprung from Aryan roots, came hither from the East" (p. 17), appears lately to have come round more and more to the view that "a sort of autochthony in the north must be ascribed to peoples built on the Teutonic type" (*Verh. d. Berl. Gesellschaft f. Anthropologie, Ethnographie, und Urgeschichte*, 1884, p. 210).

Th. Poesche imagined that he had discovered the leading characteristic of the Indo-European type in its light complexion.* Karl Penka, in two comprehensive works, *Origines Ariacæ*, 1883, and *Die Herkunft der Arier*, 1886, added on the strength of recent craniological research, that the type of the primitive race was characterised by being dolichocephalous; and at the same time he undertook to show that the home of the Indo-Europeans was only to be looked for where the blonde and the dolichocephalous type is at present most purely and distinctively developed, that is in Scandinavia.

The views laid down in these two books may be put together as follows:—

The sole origin of the whole of the human race is to be looked for in Central Europe during the Miocene period. At that time the Ice-Age was approaching, and as glaciers gradually invaded the whole of the north and centre of our quarter of the globe, all the other races of man retreated to more attractive abodes in Africa, Asia, and America. Only the original ancestors of the Aryans remained, nor had they cause to rue it; for it is the climate of the Ice Age, and the struggle with their environment that they have to thank for their blonde hair, blue eyes, gigantic limbs, and dolichocephalous skull. But the Ice Age, too, came to an end, and as the climate became milder, the animals which the ancient Aryans hunted retreated, especially the reindeer, to the north. They were followed by the Aryans themselves, for on what were they else to live? In Scandinavia a new home opened out before them, and here they evolved the stage of culture which, by the aid of Comparative Philology we can establish as primitive Aryan, and which coincides marvellously with what the geographical conditions and the fauna and flora of Scandinavia would lead us to expect. Here alone, in the kitchen-middens, it is

* An acute objection to this is raised by W. Tomaschek, *Z. f. östr. G.*, xxix. 859: "For our part, we regard blondes with their deficiency of colouring-matter in skin, hair, and eyes, as an abnormal human type, which is capable of being developed in the course of time at different and widely distant spots of the earth, under suitable climatic conditions and certain conditions of life yet to be fully investigated; but this does not imply a special, intimate connection in point of race and descent between all blonde races. 'Linnæus' caution *nimium ne crede colori* applies to men also; the colour of the eyes also can only make the very slightest claim to be regarded as a race characteristic."

possible to detect a transition from palæolithic culture (say that of the cave-dwellers of Belgium) to neolithic culture (say that of the Swiss lake-dwellers), whereas everywhere else in Europe a "hiatus" yawns between them.

Whilst this was happening in the north, two great irruptions of newcomers had taken place in depopulated Central Europe: the immigration from the south-west of the dolichocephalous, but dark peoples of the Cro-Magnon type, to which belong the original inhabitants of the Pyrenæan peninsula, Italy, Sicily, Greece, and also the Semites and the population of North Africa; and the irruption from the east of a brachycephalous, dark Mongoloid race. On French and Belgian territory these two races met, and there "crossed" with each other.

Thus stood things when from the north began the victorious march of the White Race (the meaning of *Arya*). Everywhere they appear as lords and masters, built strongholds, and forced their language and culture on the subjugated peoples. But the further the Aryan element travelled from its starting-point in the north, the more its characteristic peculiarities disappeared in the process of being crossed with peoples of another origin. This was the origin of the cross-bred population which by the unity of its language has so long deceived the world as to its heterogeneity of physique. The Slavs are naught but Aryanised Mongols; the Greeks only Pelasgian-Hamito-Semites who have learnt Aryan, &c. On the other hand, there are Aryans who have given up their language, but retained their physical characteristics, *e.g.*, the blonde and dolichocephalous Finns.

So far Penka on the Origin of the Aryans.

Can any one, even but moderately acquainted with the poverty of the material from which these over-bold inferences are drawn, help feeling that here we have to do with a poetic rather than scientific solution of the problem proposed? Can any one, however, deny that this way of attempting an explanation of the relations of the Indo-European languages and peoples contains much that is right in principle, and in any case must have a stimulating effect on the purely philological method of dealing with these things?*

We shall return subsequently to these questions, and so turn now to a series of attempts to fix the original Indo-European home in Europe, on much the same principle as that on which others (*cf.* above, p. 36), trusting to an apparent connection between the Semites and the Indo-Europeans, have tried to place it in Asia.

* Amongst important reviews of Penka's *Origines Ariacæ*, I may mention those by A. Bezzenberger (*Deutsche Lz.*, 1883, No. 44), by A. H. Sayce (*Academy*, 1883, No. 605), by W. Tomaschek (*Literaturbl. f. Orient. Phil.*, i. 133), by F. Hommel (*Archiv f. Anthrop.*, xv. Suppl. 163), by Van den Gheyn (*Revue des Questions Scientifiques*, 1884), by A. Kirchoff (*Literar. Centr.*, 1884, p. 457).

The only person almost to approve of the Scandinavian hypothesis is F. Justi (*Berl. Phil. W.*, 1884, p. 36; 1887, p. 562). *Cf.* on his earlier view above, p. 85.

The well-known ethnographer and linguistic student, W. Tomaschek, was and is very warm in support of the view, that the home of the Indo-Europeans must be placed in the east of Europe, and that this is shown by the primeval vicinity of the Indo-Europeans to the Finns; this again is demonstrated by the numerous prehistoric loans made from Indo-European to Finnic-Ugrian. We have already come across this view in Tomaschek's criticism of Höhn's book, mentioned on page 36. It comes out still more clearly in the review just mentioned of Fische's work, where, on p. 862, we have: "I trust to show, from the language of the Mordwas on the middle Volga especially, that immediately to the south of this Finnic population most Aryans, and in particular the Lithuanians, and the people that spoke Sanskrit, had their abode."

Finally, Tomaschek remains true to this view in a very instructive paper, "Ethnological and Linguistic Researches on the East of Europe" (*Ethnologisch-linguistische Forschungen über den Osten Europas, Ausland*, 1883, No. 36). The service he has rendered in proving numerous loans, important for the history of culture, from the Persian vocabulary to the Finnic-Ugrian languages, is undoubted. But when he says (*Ausland*, p. 706): "We can go still further and establish the fact that there exist in the great Ural family of languages elements, important and inalienable possessions, which came there in inconceivably remote prehistoric times as the result of intimate contact with the original Aryan people, and demonstrate that it was in the vicinity of that northern stock that the placenta of the Aryan social organism was developed," then we must note that proof of this assertion has not yet been produced. And it must be all the more difficult to produce, because it will be difficult to distinguish loans from the original Indo-Europeans from loans from those individual Indo-European peoples who have been in contact with the domain of the Ugro-Finns from of old, the Slavo-Lithuanians, Teutons, and Iranians.

A very bold step in this line of argument for proving the East European origin of the Indo-Europeans, though one which Cuno (*cf.* above, p. 90) had previously tried to make, is taken by the English anthropologist, Canan Isaac Taylor, in a paper on *The Origin and Primitive Seat of the Aryans* (*Journal of the Anthropological Institute*, February 1888), in which he propounds the hypothesis of an original kinship between the Finns and the Indo-Europeans, both from an anthropological and a linguistic point of view. He is led to this assumption on the one hand by the agreement of the physique of the Finns, Livonians, and Esthonians with the blonde, dolichocephalic type of the Indo-Europeans, which Taylor then recognises as the original type; and on the other by the attempts of various authors, especially Donner (*Vergleichendes Wörterbuch der Finnischen Sprachen*), to establish an affinity between Finnic and Indo-European languages. This affinity is shown, according to Taylor, in word-building (Finnic *juo*, "to drink;" *juo-ma*, "drink" = Sans. *dhû-má*, "smoke;" *dhû*, "to kindle"), in formative

suffixes (Lapp. *ale-m*, "I live" = Sans. *á-bharam*, "I bore"), but above all in pronominal and verbal roots (*cf.* p. 259, *ff.*). Unfortunately the celebrated anthropologist conceives the comparison of two families of language as being much easier and simpler than it really is. If what Canon Taylor wishes to prove is to be proved, it would be necessary to attempt to compare only the fundamental forms of the original Indo-European language with those of the original Ugro-Finnic language, and that subject to regular, definite laws of phonetic equivalence. What can be proved by comparing the Finn. *hepo*, "horse," with G. ἵππο (fund. form **ek-vo*), Finn. *poig*, "son," with G. παῖς (*παFι), &c.? Further, the probabilities of borrowing (*e.g.*, Finn. *paimen*, "hind," from Lith. *pëmů*), and the possibility of casual coincidence are underrated. Finally, the comparisons of roots, based on Fick and Donner, are extremely unsafe.

So the linguistic affinity of the Finns and the Indo-Europeans we must still style a dream, without, however, denying that in the course of deeper research, especially in the region of Finnic, it may possibly prove to be true. But it must be insisted on again and again that exact linguistic science at present knows and can know much less of the relations between Indo-Germanic and other families of speech than the undisciplined philologist usually imagines.

That the north and east of our quarter of the globe have been claimed in our time as the original home of the Indo-Europeans we have already seen. Herr v. Löher, *Ueber Alter, Herkunft, und Verwandtschaft der Germanen* (*Sitzungsb. philos.-phil.-hist.-Kl. der k. b. Akad. d. W.*, München, 1883, p. 593, *ff.*), makes right for the heart of it, for Germany (*cf.* above, p. 87). The Teutons, according to him, were settled in Germany from primeval times, and all the arguments used of late for the European origin of the Indo-Europeans agree best with the view that the point whence all Indo-Europeans radiated was in the centre of our quarter of the globe.

It remains to mention the works of three scholars who agree in rejecting the arguments hitherto urged in favour of the European origin of the Indo-Europeans.

They are, Max Müller, in the work we have often mentioned, *Biographies of Words and the Home of the Aryas*, London, 1888; Ch. de Ujfalvy in *Le Berceau des Aryas d'après des ouvrages recents*, Paris, 1884 (*extrait des b. de la société d'anthropologie*); and Yan de Gheyn in *L'origine européenne des Aryas*, Anvers, 1885 (Paris, 1889).

Max Müller concludes his performance, which is directed mainly against Penka's book, with the words: "I cannot bring myself to say more than *non liquet*. But if an answer must be given as to the place where our Aryan ancestors dwelt before their separation, whether in large swarms of millions, or in a few scattered tents and huts, I should still say, as I said forty years ago, 'somewhere in Asia,' and no more."

So, too, Ujfalvy regards the question of the original home of the

Indo-Europeans as still an open one. The special service of this scholar consists in his having obtained us a trustworthy knowledge of the North Persian lands and peoples, in the vicinity of the Pamir, by his own travels in those regions. Amongst the tribes speaking Aryan tongues he finds, p. 13, two perfectly distinct races: "Ce peuple irano-hindou était avant sa séparation une race mélangée de deux types bien distincts: un type châtain, petit (ou moyen) et brachycéphalique et un type brun, grand et dolichocéphalique. Les brachycéphales sont encore aujourd'hui au nord de l'Hindou-Kouch, tandis que les dolichocéphales occupent les vallées au sud de ce massif montagneux." In confutation of the view of Lindenschmit (given above, p. 101), who in his arguments for a western origin for the Indo-Europeans had appealed to the considerable mixture of population which we find amongst the Hindus, Tadschiks, Parsees, Ossetes, &c., and had pronounced the North European physical type original as compared with that of these peoples, Ujfalvy points to the chestnut-brown, brachycephalous Saltschas* of the Pamir who "*occupent depuis une haute antiquité leur patrie actuelle, le départ en tout cas des Irano-Indiens.*" For the rest he regards, p. 11, the valleys in the vicinity of the Pamir as satisfying all the conditions which linguistic palæontology requires of the original Indo-European home.

J. van den Gheyn adheres stoutly and with great warmth even now to Pictet's hypothesis, sketched above on p. 80, as to the original country.

* *Cf.* also *Quelques observations sur les Tadjiks des montagnes appelés aussi Saltschas par Ch. E. de Ujfalvy* (*Extrait des b. de la société d'anthropologie*).

PART II.

RESEARCH BY MEANS OF LANGUAGE AND HISTORY: ITS METHOD AND PRINCIPLES OF CRITICISM.

Est quadam prodire tenus, si non datur ultra.

CHAPTER I.

THE KINSHIP OF THE INDO-GERMANIC LANGUAGES AND PEOPLES.

The original Indo-Germanic language—Its differentiation into dialects and its expansion—Supposed antiquities of Zend and Sanskrit, and inferences therefrom—The original Indo-Germanic people—Linguistic affinity and racial difference—Mixed peoples—The original type of Indo-Germanic race.

In the previous pages our task was to depict with as much truth and objectivity as possible the historical development of linguistic research into primeval history. In the following pages we shall endeavour to separate the wheat from the chaff, and to peel off the husks of uncertainty and falsehood from the kernel of Linguistic Palæontology. Above all, it will be our business to establish the standpoints from which alone we can proceed to employ the materials afforded by Comparative Philology in drawing conclusions about the history of civilisation.

We shall do well to start from the two fundamental propositions on which rests the whole structure of Linguistic Palæontology. They are:—

1. That the affinity of the Indo-Germanic languages can only be explained on the assumption of a single primitive Indo-Germanic tongue; and

2. That the assumption of such a primitive Indo-Germanic tongue necessarily implies the existence of a primitive Indo-Germanic people.

The first of these two propositions can in theory hardly be opposed by any student of language. It is, in fact, postulated by every application of the Comparative Method to philology; when, for instance, we define a set of words such as Sans. *pitâ*, Lat. *pater*, Goth. *fadar*, &c., or Sans. *mâtâ*, Lat. *mater*, O.H.G. *muoter*, &c., as related, we can only explain this relation on the analogy of human beings; viz., by assuming that the existing multiplicity of those forms may be traced back to a primitive unity. Whereas, however, the inference of this pre-ethnic unity is and will continue to be nothing but a scientific hypothesis for the grammarian, we here are compelled to treat the primitive Indo-Germanic tongue as a living reality. It consequently follows that the conceptions we form of it must adapt themselves to the laws observed to regulate the origin and growth of language generally.

Now, at the outset, it would contradict these laws to imagine that the original language was completely uniform and knew no dialects, for our observation shows us that every linguistic community, great or small, contains internal differences; just as it is a fundamental fact of human nature that no two individuals are precisely identical either in their pronunciation or in the use of their vocabulary. We have already seen (p. 63) that the theory expounded by J. Schmidt tended to the conclusion that certain partial agreements among the Indo-European languages already existed as differences of dialect in the primeval period; and I confess that this view made my mental picture of it much more lively and concrete. Indeed, sometimes, the comparison of languages does not carry us beyond the establishment of differences of dialect, for which a common ancestral form may be sought in vain. This is the case, for instance, with a string of old nouns which in the European languages have to be referred to one ancestor, and in Sanskrit and Zend to quite another. For example, the primitive European forms *genu* (γένυς, Lat. *gena*, O.I. *gen*, Goth. *kinnus*) = jawbone, *dhver* (θύρα, Lat. *fores*, O.I. *dorus*, Goth. *daûr*) = door, are quite irreconcileable with Sans. *hánu* and *dvâra*, Zend *dvara*, and so on. Armenian, in most of the cases alluded to, ranges itself on the side of the European languages (Arm. *tsnôt*, "jawbone" = Europ. *genu*; Arm. *dur'n*, "door" = Europ. *dhver*).*

General considerations and special observations point to the conclusion that the original Indo-European tongue contained differences of dialect. In close connection with this conclusion is

* *Cf.* J. Schmidt, *Verwandtschaftsverhältnisse*, p. 29; A. Fick, *Spracheinheit*, p. 170, *f.*; A. Hübschmann, *K. Z.*, xxiii. p. 35, *f.* In recent times identical fundamental forms in the equations employed have once more been aimed at. Thus, cases such as G. γένυς = Sans. *hánu*, are referred, as regards the initial letter, to a new fundamental Indo-Germanic form, a sonant palatal spirant γ (*cf.* Fierlinger, *K. Z.*, xxvii. 478); the media for the media asp. in Sans. *dâr*, *dvâr* is explained by means of the case-endings beginning with *bh*. These explanations, however, are by no means certain. *Cf.* also Brugmann, *Grdr.* i. 349.

the question which has often been discussed, whether the range of the Indo-Germanic language in the primeval period—and according to our view, the primeval period can only be the period in which the individual members of the Indo-Germanic family were still united by the consciousness of a common tongue or the possibility of mutually understanding each other—was, geographically speaking, relatively broad and narrow.

Here, obviously, conjectures alone are possible. Let us, however, reflect that in the individual branches of the original language (on which their respective twigs must have continued to live a life of many centuries before language was stereotyped by writing), frequently the subtlest shades of the original tongue have quite recently been detected, and forms recovered all but identical with the forms postulated for the original tongue;* and we can hardly reject the conclusion that the development of divergences in language was a slower process in prehistoric than in historic times. This, however, is to grant the possibility that the original Indo-Germanic tongue, though differentiated into dialects, may have been used over a relatively large area, and that yet the consciousness of linguistic unity may not thereby have been rendered impossible. The most instructive example of stability of this kind is offered, according to H. Vámbéry, by the languages of the Turko-Tataric peoples, which as yet fill so little space in history; for, "in spite of a wide geographical distribution from the icy North to the furthest South, from the Lob-nor to the Adriatic—yea, in spite of a distance in time of 1500 years known to history," it is only possible to speak of "dialects—not of languages"—in this linguistic area, and "the Turk of Anatolia understands the Jakut on the Lena better than the Swiss does the Transylvanian of Saxony" (*cf. Primitive Culture*, p. 14, *ff.*). For the correctness of this statement we must make the author responsible; but the case may have been somewhat similar in the primeval Indo-European period.

If we pause for a moment on the last-named, the Celtic languages, whose weather-worn aspect (according to Schleicher's view, still often quoted) shows that they have travelled furthest from the original starting-point, we find at the very outset that their face has been scarred by a series of deep-cutting laws as to final sounds. In Old Irish, for instance, if we restore the language to the condition in which it was before these laws began to operate—and this we can do by means of the traces left by the lost syllables on the syllable of the stem which preceded them—we immediately light upon forms standing on almost the same level as the corresponding words in Latin and Greek (*cf.*, *eg.*, I. *coic* = prehistoric Irish *quenque*:

* Consider, *e.g.*, that it has recently been proved that the original Indo-European accent was in operation on Teutonic ground even during and after the first sound-shifting; that we have *brôthar*, but *mâdâr*, *fadâr*; *têhan*, but *sebân*; *bâit*, but *bitûm*, &c. (*cf.* Karl Verner, *K. Z.*, xxiii. p. 97, *f.*). Or call to mind Greek dialect-forms such as Cyprian δδFεναι (δοῦναι) = Sans. *dâvânê*, Doric ἦς (ἦν) = Sans. *âs*, and many others.

Lat. *quinque*; I. *fer*, "man" = prehistoric Irish *vira-r*; G. λύκο-s, Lat. *lupu-s*; I. *asbiur*, "say" = prehistoric Irish *ber-u*; Lat. *fero*, G. φέρω, &c.). That these prehistoric Irish forms prevailed on Celtic ground also, is proved by the remains of ancient Gallic preserved on inscriptions (Stokes, *B.B.* xi. 112). Similarly, the most ancient Norse Rune inscriptions show a state of the language which, in certain cases, affords almost a complete parallel to Sanskrit (cf. *vulfa-r*, Goth. *vulf-s*, O.N. *ulfr-*, Sans. *vṛka-s*). So, too, Teutonic proper names transmitted by the Romans reveal a stage of phonetics antecedent to all other record.

It is, therefore, not improbable that the Indo-European languages preserved a very archaic character, even on the soil on which they make their appearance in historic times; and, consequently, the conjecture seems to me to be suggested that the original Indo-Germanic language may have spread over a relatively wide area (like the Turkish languages mentioned above), without on the whole losing its homogeneity, in spite of dialectic differences in detail.

Individual Indo-Germanic languages have been credited with a special capacity for retaining old linguistic forms. Especially was this frequently conjectured in early days to be the case with the Hindu-Persian languages (Sanskrit and Iranian)—whence the further conclusion was drawn, that these languages must have remained in closest proximity to the original home (*cf.* above, p. 91). This view, however, must from our present knowledge be pronounced entirely erroneous. A comparison of the Indo-Germanic languages, with respect to their antiquity, could only be rendered fertile by establishing a uniform limit of time; and that, as is well known, could only be done by taking at the earliest, the middle of the ninth, or if we include Lithuanian, then, at the earliest, the middle of the sixteenth century of our era. How Teutonic, Slavonic, Celtic, &c., would have looked if they had been transmitted to us as they were in the age of the Rigveda, we obviously do not know; but there is nothing to contradict the assumption that the former would look just as ancient as Sanskrit, if they had been transmitted to us from the same period. That the European languages have actually in many respects preserved to the present day a more ancient phase of language than the Hindu-Persian, has already several times been insisted on (*cf.* above, pp. 41 and 70).

The second proposition, deducing the unity of the Indo-European people from the unity of the Indo-European languages, leads us into the domain of pure ethnology, in which the philologist cannot claim such unconditional faith in his ideas as in that of philology. Language obviously is only one of the tests to be employed in deciding racial affinities, and it cannot be denied that none of the classifications based on physiological characteristics coincides with the conception "Indo-European." They are either too wide, in that elements such as the Basques and Caucasians, quite heterogeneous linguistically, are united with the Indo-Europeans into a

single (Mediterranean, Caucasian, Arabo-European, &c.) race; and, consequently, it has been necessary to carry this unity back to the notorious *homo alalus* (*cf.* F. Müller, *Probleme der Linguistischen Ethnologie*, E. Behm's *Geographisches Jahrbuch*, iv. p. 302); or they are too narrow, as is the case, *e.g.*, with Retzius' system, in which Slavs, Livonians, and Albanians, as being *gentes brachycephalo orthognathæ*, are severed from the other Indo-Europeans who are designated *gentes dolichocephalæ orthognathæ*. It cannot be denied that even within the limits of individual Indo-Germanic peoples and linguistic areas the most marked physical contrasts show themselves. The population of Germany is divided into fair and dark. The same holds of the Slavs, of the Iranians (*cf.* above, p. 106), even of the Finns relatively to the Lapps. In Northern Germany, the mesocephalic type, with a tendency to the dolichocephalic, predominates; in Southern Germany, the brachycephalic. The same antithesis may be found amongst the French, and again in the Finns compared with the Lapps, and so on (Virchow, *Verhandl. d. Berliner Gesellschaft f. Anthropologie*, &c., 1881, p. 68, *f.*). Now, are these facts to shake our faith, founded on the kinship of the Indo-Germanic languages, in the prehistoric unity of the Indo-Germanic peoples? I believe that some very simple considerations show that they are not.

We speak German because we are descended from German ancestors, and our kin in foreign lands in the same way speak German, because they or their forbears came from Germany. In England, a Teutonic tongue prevails because it was brought to that island by a Teutonic race.

These examples show, however, the limits within which we must speak of the unity of the Indo-Europeans. Just as the Anglo-Saxon invasion shows without further proof that the structure of English is Teutonic, while it is impossible to understand the nationality of England without taking into account the Celtic, Roman, and Norman elements amalgamated with the Anglo-Saxons; so, too, Comparative Philology does not demand that the Indo-Europeans should be traced *en masse* to a single and identical origin: it only requires the assumption that in the individual Indo-European peoples there was a homogeneous nucleus from which the Indo-European language could spread to heterogeneous populations amalgamating with them.

That tribes speaking Indo-Germanic tongues did on reaching their new homes effect amalgamations with the inhabitants already settled there, is beyond the possibility of doubt, for in some cases the full light of history beats about the process. Let us look, *e.g.*, at the Hindo-Aryans whose advance south and south-east from the upper banks of the Indus is represented by the Vedic Hymns as a continuous conflict with the aborigines (*cf.* Zimmer, *Altind. Leben*, p. 100, *f.*). The Aryan tribes, whose complexion is expressly designated white (Rig. i. 100, 18), face the aboriginal Indians, "the black-skinned *Dasyu*," with their foreign tongue, foreign customs, foreign gods, in a life and death struggle, which has its termina-

tion in the subjugation of the barbarians and their incorporation as a fourth class, *Çûdra*, in the Hindu polity. The Indo-Germanic element is victorious, but "it cannot be doubted that in the long period that preceded this event Aryan blood was often crossed with that of the native inhabitants. Dasyu maids and women came into the house of the Aryan men as slaves; no doubt one or two here and there rose to the position of wedded wife and mistress of the household" (Zimmer, *loc. cit.*, p. 117). To the degeneracy consequent upon these crossings, and increased still further by the subsequent admixture of Scythian, Mongolian, and European elements of all kinds, must further be added the effects of the tropical climate of India which works such tremendous modifications on the physical organism of man; with the result that, at the present day, only the Brahmin families of certain districts are said to have preserved the nobler characteristics of the "Mediterranean race" (*cf.* F. Müller, *Allg. Ethnographie*, p. 457, *f.*).* Quite as frequently in the Avesta occur ancient accounts of the struggle of the Iranian population with a native non-Aryan race (*anairyão dahâvô*); and here, too, in the houses of the worshippers of Mazda dwell the daughters of unbelieving tribes as servants and concubines (W. Geiger, *Ostiran. Cultur*, p. 176, *f.*).

Similar conditions probably prevailed in Europe, though we have no direct memorials thereof. Thus, in ancient Italy, quite apart from the Phenician, Greek, and Celtic imigrations, we find by the side of the Indo-Germanic Middle-Italian race of Latins, Umbrians, Osci, &c., no fewer than four different peoples whose connection with one another, or with the Indo-Europeans, there is as yet nothing to prove:—the Etrurians, Ligurians, Iapyges, and Iberi (of the islands and Sicily). All these foreign populations, whose peculiarities, even as regards their physiological characteristics, are mentioned by Latin writers (*cf.* on the Etruscans, L. Diefenbach, *Origines Europeæ*, p. 109; on the Ligurians, *ib.*, p. 121), in the course of centuries, yielded in tongue and customs to the nucleus of Indo-Europeans in ancient Italy. Is it possible that the latter were not profoundly influenced by them physiologically.

The instructive example of a shifting of physical characteristics is afforded in Western Europe by the Celts. The ancient Gauls, like the ancient Germans, are depicted in the accounts of antiquity as a fair-haired, bright-eyed race of unusual stature, a description which no longer suits the modern Celts of Brittany, Wales, Ireland, and Scotland.† The causes of this difference we do not know.

* The ethnological exploration of India entered on a new stage with *The Ethnological Survey of India*, undertaken under the auspices of the English government by H. Risley. *Cf.* M. Müller, *Biographies of Words*, App. iv.

† *Cf.* L. Diefenbach, *ib.*, p. 160, *f.*, and A. Holtzmann, *Germanische Altertumer*, ed., A. Holder, 1873. The information on p. 123 is interesting: "When Niebuhr wrote his description of the Gauls of Brennus after the

Nevertheless, the ethnological affinity of the peoples who now speak Celtic with those who formerly spoke it, will be denied at the present day by nobody.

In all these cases, then, the Indo-Germanic element has been victorious as regards language over the assimilated populations. Why this should have happened cannot be made out with complete certainty. Generally, on the strength of modern analogies, it may be said that the language of the more highly civilised people, especially when it is the dominant and more numerous people, most readily spreads over a foreign area; though, under certain circumstances, even the victors accept the language of their more civilised captives, as, *e.g.*, has been the case with the Ural-Altaic Bulgarians and the subjugated Slavs. It is an easy inference from these considerations that the Indo-Germanic population of Europe and Asia must have possessed a developed civilisation relatively to the previous population; and the possibility of thus explaining the wide expansion of the Indo-European family of languages is obvious. Possibly direct indications that this is the correct view will be forthcoming subsequently. As, then, it is indubitable that there has been a strong admixture of heterogeneous elements with the Indo-Germanic peoples, the further question is raised whether the Indo-Germanic languages brought by the immigrants into their new abodes, have not also suffered considerable changes on the lips of the original inhabitants.

No one who admits the probability of a considerable admixture of populations in the case of the Indo-Europeans will hesitate to admit the possibility *a priori* that in all Indo-European languages there is present a certain stock of words in Indo-European clothing which it will never be possible to trace back to the primeval Indo-European period, simply because they are descended from non- and pre-Indo-European tongues. To detect such words to any extent will, of course, owing to our almost entire ignorance of those pre-Indo-European idioms, always be impossible. Further, in phonetics, word-building, and inflections, recent investigations, in the first rank of which must be mentioned Hugo Schuchardt's penetrating researches (*Kreolische Studien, Sitzungsberichte der Wiener Akademie, Slawo-Deutsches und Slawo-Italienisches*, Graz, 1885), have made it clearer and clearer that the notion of a "mixed language" must have much more weight assigned to it than has heretofore been allowed. It is, therefore, theoretically possible that in these departments of the grammars of the Indo-Germanic languages, non-Indo-Germanic elements or phonetic phenomena due to the influence of non-Indo-Germanic languages may be present.

account of the ancients, he received a communication from Brittany that he had described no Gauls but Germans: the Gauls, the Bretons, are short and dark, black or brown." It is frequently assumed at the present day that the state of things with regard to the ancient Celtic populations is explained by the absorption of an Indo-Germanic people (the Galatians), corresponding to the description of the ancients, in a short, dark, brachycephalous original population (the Celts)—a view, however, which lacks historical evidence.

It must also, however, be pointed out that as yet no one has succeeded in detecting with any certainty cases of such influence, exercised by the languages of the original inhabitants on the more ancient stages of the life either of Sanskrit, Greek, Latin, or any other Indo-Germanic language.*

In any case, from what we have already seen, the question as to the original physical type of the Indo-Europeans must be reduced to the question: What was the original type of that nucleus of Indo-European population from which the Indo-European language was communicated to the non-Indo-European element in the various individual peoples?

But this way of putting the question also is possibly false, in as far as it proceeds on the assumption that the physical character of the original Indo-Germanic people at large must necessarily have been uniform. As a matter of fact, many anthropologists and ethnologists do proceed, tacitly or avowedly, on this assumption. Penka says, in *Der Herkunft der Arier*, p. 20, word for word: "To assume a primitive people, consisting of two different races, is to credit nature with developing at the same time, and in the same environment, one and the same original form in different directions —an assumption the absurdity of which is patent." In reality, however, the case is otherwise. As a matter of chronology, the origin of the Indo-Europeans and the origin of man are not to be confounded. If we reflect that our earliest historical knowledge of the European branch of the Indo-Germanic family does not yet go back so far as B.C. 1000, and that the Indo-Germanic peoples of Europe are not, when they make their first appearance, yet closely united to the soil of their homes (*cf.* Part iv. chs. 5 and 12), I do not see what there is to confute the idea that the Indo-Europeans of Europe were yet dwelling together, when, perhaps, already on the banks of the Nile, the first pyramids had heralded the dawn of history. And why could not non-Indo-Germanic elements be taken up into the common tongue and culture of the Indo-Europeans at that time?

When Indo-European peoples meet us in history, they present us at any rate with no uniform physical type. Even the old Teutons, who at present are readily accepted as the progenitors of the whole Indo-European race, are regarded by Virchow, on p. 156 of the lecture already mentioned (*Die Deutschen und die Germanen, Verhandlungen der Berliner Gesellschaft für Anthropologie*, &c., 1881), as probably already differentiated physically. Indeed, the same student, whose caution and circumspection one is most inclined to trust in these questions, has subsequently (*Korrespondenz-Blatt der deutschen Gesellschaft für Anthropologie*, 1883, p. 144) flatly denied a uniform Indo-Germanic type, and has assumed two

* *Cf.* also Ascoli, *Ueber die ethnologischen Gründe der Umgestaltung der Sprachen* (*Verh. d. V. Inter. Or.-Konge.*, ii. 279, *ff.*), and M. Gaster, *Die nichtlateinischen Elemente im Rumunischen* (*Gröber's Grundriss*, p. 406, *ff.*). *Ibidem*, G. Meyer describes Albanian (*cf.* above, p. 76) as a "half-Romance mixed language" (p. 805).

streams, a dolichocephalous and a brachycephalous, flowing side by side together from the beginning.

Be this as it may, thus much is certain: that all these questions at present need so much light thrown upon them, and are so far from being capable of decision, that an attempt such as that undertaken by Penka (above, p. 102 *ff.*), to determine the origin of the Indo-Europeans by means of craniology and other anatomical indications, must be designated as premature *a limine*.

From these ethnologico-linguistic considerations we may now turn to the employment of Comparative Philology for the purposes of the history of culture.

CHAPTER II.

LOSSES FROM THE ORIGINAL LANGUAGE.

The probability of considerable losses from the Indo-Germanic vocabulary—Consequences thereof—Suspicious nature of negative arguments about the culture of primitive times—The question of the original home in this connection—Occasionally, however, the uniform absence of names amounts to proof: fishes, colours, flowers.

An instance in which an etymological equation can be carried through all the Indo-Germanic languages or groups of languages which have been transmitted to us is, as everybody knows, extremely rare. Even in the case of extremely tenacious and wide-spreading groups of cognate words, it not unfrequently happens that one language or other is found wanting in the primitive word. In the Slav languages the Indo-Germanic name for "father" is wanting, in Greek that for "sister," in Latin that for "daughter," and so on. No one will doubt, that in all these cases, the words did once exist in those languages, and that in the course of time they have been displaced by others.

For, to lose what it once possessed, is one of the commonest occurrences in the life of a language. Whoever turns over any single page of a Middle-High German text, finds there a whole string of words, which at the present day are no longer used, or no longer used independently. Since, however, in the relatively short time which separates us from the Middle Ages, a not inconsiderable part of the vocabulary of that period can fall into desuetude, must not the losses from the original language have been tremendous, when we consider the local variations and revolutions in culture to which the Indo-Europeans were exposed when they had left their original home? This high probability of very extensive losses from the original vocabulary necessitates the greatest caution in two different directions in the employment of linguistic arguments for the investigation of primitive culture. It is in the first place extremely precarious to infer, from the absence of cognate words, a want of acquaintance on the part of the Indo-Europeans with certain ideas or objects of civilisation—an axiom which in principle is admitted by everybody, but is frequently neglected in detail.

A. H. Sayce, *The Principles of Comparative Philology*, is right then in saying, p. 203: "Just as the modern geologist insists on the imperfection of the geological record, so ought the glottologist to remember that only the wrecks and fragments of ancient speech have been preserved to us by happy accident. Countless words and forms have perished altogether, and though Pictet can show that an object designated by the same name in both Eastern and Western Aryan dialects must have been known to our remote ancestors of the prehistoric period . . . . . yet the converse of this does not hold good."

Specially important, however, is this standpoint for the question of the *original Indo-European home*, so far as there has been a tendency to infer it from apparent deficiencies of the Indo-Germanic vocabulary in the designation of certain plants and animals.

The Indo-Germanic family extends, according to A. Grisebach, over three areas of vegetation, the zone of the Monsoons, the steppes of Europe and Asia, and the forests of the East Continent, each possessing its peculiar fauna and flora. Now, place the original starting-point of the Indo-Europeans where you will, it is wholly inconceivable that the original names for plants and animals should have persisted throughout the gradual expansion of the Indo-Germanic peoples. How could the names for the things persist when the things themselves had disappeared from view for perhaps thousands of years? Look, for instance, at Sanskrit and Iranian, which differ little more than dialects: out of the whole plant-world, the Soma, the gift of the gods, for which a representative on earth can only be found with difficulty (cf. *Z. d. M.-G.*, xxxv. pp. 680–92), is almost the only plant to which both nations give the same name; and yet no one thinks of explaining this fact otherwise than by the complete separation, in the geography of plants, of the historical homes of the two peoples. A very simple act of reflection is therefore enough to show that facts, such as that original Indo-Germanic names for lion, tiger, camel, &c., cannot be ascertained with certainty, cannot turn the scale either in favour of or against the European or the Asiatic hypothesis of the original home. Accordingly, F. Hommel (*cf.* above, p. 97) has rightly laid no particular weight on such arguments in determining the original locality of the Semites.

Although, then, the greatest caution is necessary when we are dealing with particular cases, this does not amount to saying that the absence of identical names (when it extends to whole categories of conceptions, and can be explained by observation of a historical kind) possesses no demonstrative force, and here I venture to enter into some of these cases more closely.

The absence in the Indo-Germanic group of cognate names for fishes is striking. In the terms employed to designate the whole class we only find partial conformities (as Sans. *mátsya*, Zend *masya*; Lat. *piscis*, L. *fasc*, Goth. *fisks*; Lith. *żuwis*, O.P. *zukans*, Ar. *dzukn*, *zoükn*). As for the various kinds of fish, a common name for eel seems to run through the European languages (Lat.

anguilla, G. ἔγχελυς, Lith. *ungurỹs*, Ch. Slav. *agoristĭ*), unless, indeed, these words too were first evolved in the separate languages out of a common name for snake (Lat. *anguis*, G. ἔχις, Lith. *angis*, Sans. *áhi*, &c.), and were employed to designate the eel as "a little snake" just as in Old Irish this fish is called *esaung* (*sung* = *anguis*), *i.e.*, "swamp-snake." Other instances such as O.H.G. *lachs*, Russ. *lozosĭ*, Lith. *laszíszà*, O.N. *sild*, O.S. *seildi*, Lith. *silkĭ*, Lat. *attilus*, G. ἐτελίς, are confined to a limited linguistic area, and are, at any rate in the last cases, probably due to borrowing. As a matter of fact, it is only after their separation that the Indo-Germanic peoples seem to have turned their attention to fishing, and to have acquired a taste for fish as food. In the hymns of the Rigveda, fishing is still wholly unknown (*cf.* Zimmer, *Altindisches Leben*, p. 26); and so, too, in the Homeric period it is only in times of extremity that fish is used by the heroes as food (Od. xii. 330; iv. 368); the only species named is the eel, which, however, by Homer himself is scarcely counted a fish (ἐγχέλυές τε καὶ ἰχθύες; *cf.* E. Buchholtz, *Die Homerischen Realien*, i. 2, p. 104, *f.*). Ἰχθυοφάγοι, "fish-eaters," is a name which occurs in Herodotus for barbarians on the Arabian sea, and is constructed on the same principle as βουτυροφάγοι, "butter-eaters."* The diversity of Greek and Latin in all fishing terms has been remarked ere now by W. Helbig (*cf.* p. 75). In the lake-dwellings of the Po, also, no fishing tackle whatever, or hooks, &c., have been found, so that their ancient inhabitants, who, according to Helbig's investigations, belonged to the Italian race, cannot in spite of their favourable opportunities have been in the habit of fishing the teeming waters of the Po.†

A second example of the force of linguistic arguments, even in a negative direction, may be taken from the Indo-Germanic nomenclature of colours. Recent researches into the designations

* *Cf.* O. Weise, *Die griech. Wörter im Latein*, p. 111, who regards as European the names for eel, pike (*lupus*, λύκος, *lucius*), ray (Lat. *raja*, Swr. *rocka*?), perch (Lat. *acus*, O.H.G. *ag*?), as Graeco-Italian the equations *mugil* = μύξος, *attilus* = ἐτελίς, *squalus* = κῆτος, *murex* = μύαξ. The two latter alone seem to have a primeval connection with each other. The former may have signified any kind of sea-beast—the sea was known to the European branch of the Indo-Germanic family (Part iv. ch. x.)—the latter any kind of slug.

† It has been objected to me privately "that it is scarcely conceivable that the Greeks, a maritime nation *par excellence*, should not have eaten fish from the earliest times." The occurrence of the fish-hook in Homer, also points to the existence of fishing as a craft. In this connection reference may be made to Wilamowitz's investigations (*Homerische Untersuchungen*, p. 292): according to him, relatively to the time at which the epic (which does not allow the heroes to ride, to write, to make soup, eat fish, &c.) is fixed, the age of our Homer is a comparatively recent one, in which a different state of culture prevailed. The value, however, of such features in the old epic style as demonstrating the existence of a period when heroes really did not ride, write, make soup, and eat fish (precisely because in that period they were not a maritime nation *par excellence*), is no more impaired thereby than is the value of the primeval linguistic forms which occur in the epic style, and were made use of by the bards. The fishing-hook (ἀγκιστρον), besides, is only mentioned in the above two passages of the Odyssey, iv. 368, and xii. 330, of which the latter, moreover, is generally acknowledged as having the former in view.

and sense for colours amongst savages of the most opposite descriptions (*cf.* H. Magnus, *Untersuchungen über den Farbensinn der Naturvölker*, 1880), have led to the result that terms for the two long-wave colours, red and yellow, are most clearly developed. Further, the simultaneous action of all the rays on the retina of the eye, and the total absence of the sensation of light, *i.e.* light and darkness, white and black, are, generally speaking, clearly marked in language. On the other hand, the nomenclature of colours is wretchedly defective when it comes to the short-wave colours, green and blue.

With this circumstance, which after Magnus' investigations may be regarded as normal amongst primitive peoples, the actual facts of language in the primitive Indo-Germanic period most completely correspond. The whole of our family of languages agrees in Sans. *rudhirá*, G. ἐρυθρός, Lat. *ruber*, Ch. Sl. *rŭdrŭ*, Lith. *raudónas* L. *rūad*, Goth. *rauds*.

There is no other linguistic equation equally extensive with this, though the colours yellow, white, and black can be shown to have been recognised and named in the original language, or at least in parts of the area covered by it.

Yellow.—For the designation of this colour the two roots *ghel* and *ghel* are used, the derivatives from which cannot always be sharply distinguished. To them belong Sans. *hári*, *hariná*, *hárit*, *hárita*, "yellow, yellowish, also greenish;" Zend *zairita*, *zairina*, "yellowish, green;" G. χλωρός, "yellow-green;" Lat. *helvus*, *fulvus*, *flāvus* (*ghvo*); O.H.G. *gelo*; Lith. *želti*, "green" (*geltas*, "yellow"); O.S. *zelenŭ*, "green" (*žlŭčĭ*, "gall"), &c. It is manifest that these roots have a tendency to pass into the meaning of green, especially the green of the young crops (G. χλόη); nevertheless, yellow seems to have been the starting-point, as is indicated by ancient suffix-like formations such as Lat. *helvus* = O.H.G. *gelo*,* Sans. *hiranya* = Zend *zaranya*, O.S. *zlato* = Goth. *gulþ*, "gold" (*cf.* Part. iii. ch. iv.).

White.—Sans *rajatá*, &c., has for the most part passed into the meaning of silver. Of its fundamental meaning only traces can be discovered (Part iii. ch. v.); Sans. *çvētá* (rt. *çvit* / *çvid*), Zend *spaēta*, Goth. *hveits*, G. λευκός, Lith. *laũks*, Ir. *lauch*; G. φᾱός = Ir. *bán*. These four series regard white as the shining colour. To them must be added: O.H.G. *falo* = O.S. *plavŭ*, "white;" G. ἀλφός = Lat. *albus*.

Black.—Sans. *krshná*, O.S. *črĭnŭ*, O.Pr. *kirsna*, Sans. *malina*, *mála*, "dirt," G. μέλας, Lett. *melns* (*cf.* N.H.G. *schwarz*, Lat. *sordes*, "dirt," O.H.G. *salo*, "black, dirty").

In no case can similar series or groups be detected for green, still less for blue.

* This word *ghel-ro* has been the starting-point whence by analogy the suffix *-ro* has spread through Teutonic and Latin names of colours: O.H.G. *faro*, "coloured," *salo*, "black;" A.S. *læsa*, "purple;" O.H.G. *grâo*, *blâo*, &c.; Lat. *vārus*, *furvus*, &c. Kluge, *Nomin-Stammbildungsl.*, p. 81; Brugmann, *Grundriss*, ii. i. p. 128.

In the same way a word for "colour" cannot be discovered in the original Indo-Germanic tongue, a fact which does not seem to be accidental (*cf.* Magnus, *ib.*, p. 14, *f.*; *Der Begriff der Farbe bei den Naturvölkern*). The later expressions for this conception conceive colour as the covering of the skin (Sans. *várna* : *var*, "cover;" Lat. *color* : *occultere*; *G.* χρῶμα : χρώς, "skin").

Now, whether from all this it follows that the most ancient Indo-Europeans were deficient physiologically in the capacity for discriminating the short-wave colours, is a question which, as it has lately been proved that the power of apprehending and the power of naming colours do not absolutely coincide (*cf.* Magnus, *l.*, p. 34), I gladly leave open. To me it seems that the poverty or wealth of a language in colour-names much rather depends on the general culture of a people. Of various pastoral tribes of Africa we learn that the examination of their colour-names "met with absolutely no difficulties, as long as it dealt with colours which occur in animals, wild and domesticated, black, grey, white, yellow, (including the red of the cow), and confusion first began with the colours, which are not observed in animals, green and blue" (*cf.* Magnus, *ib.*, p. 18). So, too, amongst the Finns, who absolutely call colour *karva*, "hair," such colours as are not met with in furry animals, as yellow, green, blue, have partially borrowed names (*cf.* A. Ahlqvist, *Die Culturwoerter in den westf. Sprachen*, p. 91). Much the same may the state of things have been with the nomad Indo-Europeans.*

* *Cf.* O. Weise, *Die Farbenbezeichnungen der Indogermanen B. Beitr. z. Kunde der indog. Spr.*, ii. p. 273, *f.* Other philological literature on this point will be found in L. Geiger, *Ueber den Farbensinn der Urzeit und seiner Entwicklung (Zur Entwicklungsgesch. d. Menschheit*, 1871, p. 45, *f.*; A. Baumeister, *Celtische Briefe*, 1874, p. 112, *f.*; Pole, "Colour Blindness in Relation to the Homeric Expressions for Colour," *Nature*, 1878, p. 676; H. Vámbéry, *Die primitive Cultur des turko-tatarischen Volkes*, 1879, p. 224, *f.*; Grant Allen, *Der Farbensinn. Sein Ursprung und seine Entwicklung. Ein Beitrag zur vergleichenden Psychologie. Mit einer Einleitung von Dr E. Krause*, Leipzig, 1880.

The remarks are quite erroneous which are made against Comparative Philologists, and particularly against the conclusions of the first edition of this work, by Edm. Veckenstedt, *Geschichte der griechischen Farbenlehre*, 1888, p. 53, where he endeavours to show that the Greeks of the most ancient times distinguished colours just as much as Greeks of the latest period.

What I maintained, and still maintain, is, first, that the name for red is the most uniform and most widely spread equation in the way of names of colour in the Indo-Germanic languages; next, that groups of languages agree as to the names of yellow, white and black also; third, that equations for green, and particularly for blue, are absolutely wanting. Inasmuch as this lack of terms for green and blue occurs amongst numerous uncivilised peoples, that it should also occur amongst the Indo-Europeans is, perhaps, not a mere accident —and in this connection alone is this subject at all touched upon. How this lack of terms is to be explained I have not undertaken to decide. I have, however, expressed myself very sceptically with regard to the assumption that an evolution of the colour sense can be traced in language. How, then, as far as I am concerned, can Veckenstedt talk of "linguistic Darwinism" and "*Augendarwinisten*?"

How small his acquaintance is with what constitutes linguistic evidence is shown by his attempt to make out a series of primevally connected words for

In this connection, the almost entire deficiency in the Indo-Germanic languages of common names for flowers should perhaps be observed. The few coincidences, *e.g.*, between Latin and Greek (ῥόδον : *rosa*, λείριον : *lilium*, ἴον : *viola*, μαλαχή : *malva*, &c.), are either due to borrowing (*cf.*, however, O. Weise, *ib.*, p. 127), or certainly at any rate indicate the wild plants. Of the Hindus of the Veda the words of R. Roths hold good (*Z. d. D. M. G.*, xxxv. p. 84): "Generally speaking, it may be said that flowers have scarcely a place in the Veda. Wreaths of flowers, of course, are used as decorations, but the separate flowers and their beauty are not yet appreciated. That lesson was first learnt later by the Hindu, when surrounded by another flora." Amongst the Homeric Greeks, too, in spite of their extensive gardening and their different names for different flowers (λείριον in λειριόεις, κρόκος, ὑάκινθος, ἴον, ῥόδον in ῥοδοδάκτολος,* and ῥοδόεις), not a trace of floriculture is yet to be found (*cf.*, E. Buchholz, *Die homerischen Realien*, ii. p. 111, *f*).

So, too, in the Turko-Tartaric languages common names for the different kinds of flowers are wanting (*cf.* H. Vámbéry, *Die primitive Kultur*, p. 223), so that in reality it is only at an advanced period of culture that delight in the dainty gems of mead and wood seems to awake.

A remarkably instructive example of the validity of the argument *e silentio linguarum* will meet us in Part iv. ch. xii., where we hope to show, with regard to the terminology of names of kin, no terms for the affinity of the husband with the wife's relatives were or could be formed.

blue, which he finds in G. ἴον = Lat. *viola*, and in Lat. *vitrum*, G. ἰσάτις, N.H.G. *waid*, &c., as though it followed that because these plants were known therefore the colour blue was recognised and named in the primeval times. What, too, is said about κύανος is altogether false, and not in accordance with our present etymological knowledge. There is much else that is remarkable in the book.

* The rose is first unmistakably mentioned in Archilochus (fr. 29), and that along with the myrtle, which is quite unknown to Homer:

> ἔχουσα θαλλὸν μυρσίνης ἐτέρπετο
> ῥοδῆν τε καλὸν ἄνθος. ἡ δέ οἱ κόμη
> ὠμοὺς κατεσκίαζε καὶ μετάφρενα.

Ῥόδον (Ϝόδον), as is well known, is a loan from the Persian (Arm. *vard*, N. Pers. *gul*; *cf.* Aram. *vardâh*).

CHAPTER III.

THE GEOGRAPHICAL DISTRIBUTION OF INDO-GERMANIC EQUATIONS.

Partial coincidences in the Indo-Germanic vocabulary may be due either to: (1) Accident, (2) differences of dialect in the original language, (3) new formations common to separate groups of language—Kuhn's theory or Transition theory—The affinities of the Teutonic and the Greek vocabulary—Common European culture—Difficulty of the questions treated.

THE probability of tremendous gaps in the transmission of the ancient vocabulary makes prudence in another direction extremely necessary in the employment of linguistic materials for the history of culture. It has been fully explained in the first part of our work how coincidences between groups of Indo-Germanic languages have been used in the same way as the vocabulary of the original language for depicting epochs of culture, which should seem to fairly well bridge over the chasm between the dim and distant primeval period, and our first historical knowledge of the separate peoples. The thought of the possibility of tracing back the primeval history of the Teutonic people, for example, through an original Teutonic, a Slavo-Teutonic, a European epoch, right back to the primeval Indo-European period, could not but lend a new and special charm to Linguistic Palæontology. Unfortunately, very simple considerations are enough to show that in this investigation of the prehistoric strata of culture, the Science of Language has as yet attained but few indisputable results.

Obviously, to begin with, it is, from a purely linguistic point of view, an extremely useful beginning to establish, as Fick, Schmidt, and others have done in careful catalogues of words, the geographical extension of etymological equations in the bounds of the Indo-European family. But now to use catalogues of this kind, solely in such a way as to predicate, with regard to the amount of culture contained in them, that, *e.g.*, a Græco-Italian period was richer than a European, a European than an Indo-European, and so on—a method of proceeding such as this is from the outset hampered by the incapacity of science to decide with certainty in individual cases whether it was or was not by accident that the series of words in question was limited to a certain group of languages.

Recent etymological research has frequently extended the area of sets of words which have an importance for the history of culture. Hitherto, for example, it was held that the equation Lat. *hordeum*, corresponding to the Teutonic *gerste*, was limited to European ground. From this the further conclusion was drawn that this species of grain was not cultivated before the European period. Recently, however, it has been shown that that word reaches a considerable distance in the direction of Asia, as is shown by the Armenian *gari*, Pehlevi *jurd-ak*, Baluči *zurth-ani*. So, too, equations such as Lat. *grus*, G. *γέρανος*, O.I. gen. *griuin*, A.S. *gran*, Lith. *gérvé* (*gérsze*), O.S. *žeravi*, "crane;" Lat. *glans*, G. *βάλανος*, O.S. *želǫdi*, "acorn," were regarded as exclusively European until they were established in Asiatic territory as well (Arm. *krounkn* = *γέρανος*; Arm. *kalin* = *βάλανος*).

It is then by no means permissible to refuse any word you like, along with the concept indicated by it, to the primeval period, and to assign it to a later epoch, simply on the ground that it has only been handed down by a single group of related languages. Are we to assume that the Indo-Europeans of Europe were the first to experience the need of a word for their beards (Lat. *barba*, Lith. *barzdà*, O.S. *brada*, N.H.G. *bart*), while their forefathers before them had perhaps a name for razor (*kshurá* = *ξυρόν*)? Or is it probable that the bird had a designation in the primitive period (Sans. *ví*, Zend. *vi*, Lat. *avis*, G. *οἰωνός*, *ὀ-Fι-ωνός*), and that the bird's egg did not get one until the European epoch (G. *ὠόν*, Lat. *ovum*, O.H.G. *ei*, plur. *eigir*, O.I. *og*, O.S. *jaje*)? Indeed, have not words of a primitive formation which have been transmitted by only a single language, much like the Teutonic substantives horse, balk (= beams, rafter), boat, and a hundred others, a right at least in theory to be regarded as Indo-Germanic productions?

Now, it certainly is not possible that every partial coincidence between the Indo-European languages can be due to the loss of linguistic property by the languages which do not share in particular equations. Else we should have to assume for the original Indo-Germanic tongue an exuberance of homonymous and synonymous expressions such as would be inconceivable in the language of even the most civilised peoples. It is, therefore, extremely probable that a large part of the equations in question are really, locally or chronologically, perfectly distinct acts of creation performed by the instinct for language; and this brings us face to face with the question, how it is possible to conceive their production in particular instances.

We have already mentioned that the original Indo-Germanic language, the moment it is conceived, not as a philological abstraction, but as something complete in itself, as the actual spoken language of an actually existing people, must after every analogy of language have been differentiated into dialects; and as there has been a tendency lately (*cf.* above, p. 108) to refer certain coincidences between Indo-Germanic languages, as regards form, to these differences of dialect in the original language, it might conceivably be

possible to explain in the same way the exclusive possession of certain verbal signs of culture by certain groups of peoples. When one considers that the Indo-Europeans were above all things a cattle-breeding people, it might appear striking that with scarcely an exception, it is only the generic names for cattle that coincide in most of the Indo-Germanic languages. The explanation of this may perhaps be that these generic names held throughout the whole area of the original language, and that by the side of them special names existed in the separate dialects for domesticated animals according to their sex and age—*e.g.*, Sans. *dhénu* = Zend *daénu*; Sans. *vaçá*, Lat. *vacca*, for cow, the mother animal; Sans. *mêshá* = Zend *maêsha*; Sans. *úraṇa* = G. ἀρήν, for ram, he-goat; Zend *bûza* = A.S. *bucca*, Ir. *bocc* (G. κάπρος, "boar"); Lat. *caper* = O.N. *hafr*, for she-goat, and many others. Or if one thinks of the endless names for milk in the the German dialects (J. Grimm, *Geschichte d. deutschen Sprache*, p. 997), one might similarly explain its different names in Indo-Germanic languages (Sans. *páyas* = Zend *payaṇh*; G. γάλα = Lat. *lac*; Goth. *miluks* = I. *melg* (*Windisch Ir. T.*, p. 685); Sans. *dádhi* = O.P. acc. *dada-n* (here observe the agreement of geographical groups).

Although, as regards the history of language and culture, there is a probability that some of the partial agreements in the Indo-Germanic vocabulary derive from differences in dialect in the original tongue, yet, obviously still more owe their existence to the further evolution of Indo-Germanic language and civilisation. Now, in what way soever, whether by the pedigree theory, or by means of the wave theory (*cf.* above, p. 64, *f.*), we conceive the expansion of the Indo-Germanic peoples, thus much is beyond doubt: that the Indo-Germanic tribes in the course of time encountered an ever increasing quantity of ideas and objects of civilisation for which the ancient language of the original home no longer offered any sufficient terminology. In order, however, to understand how this deficiency was supplied we must be extremely careful not to confound this process with the origin of language. We must exclude the creation, unless by onomatopœsis, of new roots and words; and it follows that languages so far as they did not, along with foreign objects of civilisation imported from abroad, also adopt the foreign words and sounds for them—a point with which we shall have to deal subsequently—must have drawn from the founts of their own possession for the expression of the new ideas which crowded in upon them. The course followed was in the main the same as that adopted at the present day in presence of the same problem; it was that of narrowing and specialising a wider and more general term, in order to provide a designation for the new objects of civilisation.* We understand well enough now what is meant by a train, steamer, &c., and yet, after a little reflection we must admit that these words contain but a very general description of the objects intended. A similar linguistic process can still be observed

* *Cf.* the author's *Ueber den Gedanken einer Kulturgeschichte der Indogermanen auf Sprachw. Grundlage*, Jena, 1887, p. 8, *ff.*

and traced in the partial coincidences of the Indo-European vocabulary.

This is the case when the European languages give a series of equations such as G. μύλλω, Lat. *molere*, Goth. *malan*, I. *melim*, O.S. *melja*, Lith. *malu*, or G. ἀρόω, Lat. *arare*, J. *airim*, Goth. *arjan*, Lith. *árti*, O.S. *orati*, a special meaning, applied to corn and farming, which they did not originally possess (*cf.* Sans. *mar*², B.R. "to pulverise," and Sans. *ar*, in the meaning of "move, excite"). This is the case when the Celto-Teutons express the conception of heritage (I. *orbo*, Goth. *arbi-numja*) as "orphaned property" (Lat. *orbus*, G. ὀρφανός), or obtained a common name for butter (I. *imb*, O.H.G. *anche*) from a stem which originally only had the general signification of "ointment" (Sans. *añjana*, Lat. *unguentum*). This, too, when the Lithu-Slavo-Teutons indicated the conception of the hand-mill (Lith. *girnos*, O.S. *žrŭny*, Goth. *gairnus**) by a stem (**gerno*), the original meaning of which was "grinding" or "grinder" (Sans. *jar*¹, transferred "to be worn out by use"), or when they unite in using for the designation of thousand (Lith. *tūkstantis*, O.S. *tysąsta*, Goth. *þusundi*), a word whose first meaning was "many hundreds" (*cf.* μύριοι, F. Kluge, *Pauls Grundriss d. germ. Phil.*, i.), &c.

Another species of change of meaning, which in opposition to that just described (determinative) may be called associative, occurs when, for instance, in Teutonic-Slavonic a word for gold (Goth. *gulþ*, O.S. *zlato*) is obtained from an adjective, **ghol-to-m*, "yellow" (associated with the previously existing Goth. *aiz*), or in Hindu-Persian the same concept (Sans. *hir-anya*, Zend *zaranya*) is designated by a derivative, **ĝher-enjo* (*cf.* O.S. *zel-enŭ*, "greenish yellow") formed from the same root, which is also related to the previously existing Sans. *áyas*, Zend *ayañh* (*cf.* Part iii. ch. ii.).

Now, as regards the origin of these coincidences between groups of languages, obviously the only way in which we can conceive it is that at a certain point in the Indo-European area, a new conception, due to an advance in culture, fixed itself in the language and spread from that spot more or less widely through the neighbourhood, just as it was through groups that new formations in language, according to J. Schmidt's view (*cf.* above, p. 64), spread over the Indo-European area.

We are not hereby compelled to assume absolute identity of language between the peoples who applied a common name to a new advance in culture. No one will imagine that dialects had not been differentiated among the Teutonic peoples at the time when they came in contact with the Romans; and yet the names of various important features of civilisation spread throughout all the tribes, and, what is more, they spread in the forms appropriate to the separate idioms (*cf.*, *e.g.*, Lat. *caseus* = O.H.G. *châsi*, O.S. *kâsi*, A.S. *čȳse*, Eng. *cheese*), so that if the existence of the Latin original were not too manifest one might at times be

* I. *bró*, "mill" = Sans. *grâ-van*, "stone for squeezing soma," may be connected as regards root.

tempted to believe in a primeval connection between the words. On the other hand, we must assume geographical continuity between the languages which partake in the equations quoted above, unless there are reasons to show that their coincidence in a given stage of the meaning of a word is due to a freak of chance. That chance does here too play a part not to be overlooked is shown, *e.g.*, by the coincidence of the name for silver in Latin and the Hindu-Persian languages (Lat. *argentum* = Sans. *rajatá*, Zend *erezata*, Arm. *artsath*). For we shall show in detail further on that this metal cannot have been known in the primeval Indo-Germanic period. If this is so, it follows that the equation is so far due to chance that the Hindu-Persians and Italians, without communication with each other, employed to designate silver an adjective which existed in all their languages with the meaning "bright," "whitish;" and in this there is nothing at all astonishing, for the Semitic *kesef*, &c., and the Egyptian *hat*, Copt. *chat*, "silver," like the G. ἄργυρος (*cf.* λαμυρός, ἀτωμύλος) ἀργός, originally mean "bright," "grey-white." We shall return to this point in ch. v. (Meaning of Words).

Different decisions will be reached as to the history and chronology of agreements which are important for the history of culture, and are exhibited only by groups of Irish Germanic languages, according as the expansion of the Indo-Europeans is conceived from the point of view of the pedigree or the transition theory. From the standpoint of the former, for instance, the mill will have received its name in the North European and South European languages (G. μύλη, L. *mola*) at a time when the populations of North and South Europe, bound together in groups having a close linguistic connection with each other, had in the course of their migrations from the original home arrived at abodes geographically separated from one another. From the point of view of the continuity theory, however, the formation of a term for the mill, whether simultaneous or not in the north and the south, will have taken place at a time when the whole Indo-Germanic linguistic area was still connected together by a series of continuous, gradual transitions; for in this way alone is it possible to explain the points of contact which the North European languages have with the South European, and those which some European languages have with the Hindu-Persian even in that portion of the vocabulary important for the history of culture. *Cf.*, *e.g.*, A.S. *earh*, "arrow" = Lat. *arcus*, "bow;" O.H.G. *bahhan* = G. φώγω; Goth. *aúhsa* = Sans. *ukshán*; G. ἄτρυκτος = Sans. *tarkú*; Lith. *dúna* = Sans. *dhánâ*, "corn, bread."

Finally, Leskien's intermediary theory (above, p. 71) might be applied here. In the original home the Greeks may have been neighbours of the Hindu-Persians, with whom they may have discovered and named the concept thousand (G. χίλιοι, Sans. *sahásra*, Zend. *hazañra*); then they tore away from the Hindo-Persians and drew up to the other Europeans who had separated from the Indo-European community some time before. The formation of expres-

genus, such as ἄροσις, γάλως, ἀρόω, belongs to this period. Then—and this time in company with the Persians—they broke this bond also, and went through a Greco-Italian period, during which equations like *Vesta* = ἑστία arose.

But in discussing these possibilities, which show how insecurely we are still groping about in these matters, the question will be put: Cannot language itself be made to demonstrate that—apart from the close connection universally admitted to exist between the Hindus and Persians on the one hand, and the Slavs and Letthinders on the other—two or more Indo-Germanic languages are connected together by such a large and significant number of instances, peculiar to themselves, of the possession of words important for the history of culture, that they are thereby drawn closer to each other than to the rest of the Indo-Germanic languages?

I am of opinion that in the present condition of our science no decisive answer can be given to the question. In order to answer it, it would first be necessary to ascertain the peculiar points of agreement which each Indo-Germanic language has with each other Indo-Germanic language, and which are confined to each pair of languages respectively. A beginning has been made in this direction by Fick and A. Schmidt, but it is not enough to regard Lithuanian, for instance, only in its relation to Hindu-Persian, Slavonic, Teutonic; the relations of Lithuanian to the vocabulary of Greek and of Latin would have to be carefully investigated. Only when the complete materials, digested in this manner, lay before us, would it be possible to return to the question started above; and then, perhaps, we should have some clearer cases of connection, as regards culture, between the various Indo-Germanic languages than we have now.

Let us dwell for a short time, for instance, on the closer connections on the one hand of Teutonic, and on the other of Greek, with the rest of the Indo-Germanic languages; the former has been dealt with from the above point of view by F. Kluge (in *Paul's Grundriss d. germ. Phil.*, i.), and there can be no doubt that our stock of languages has the most intimate connection, in the first place, with its two neighbours, the Celtic and Slavonic branches, though as regards both it is often difficult, indeed impossible, to distinguish clearly between what was early borrowed and what is primevally related. *Cf.*, on this point, ch. vi. below, and p. 71 above.

But as regards now the relation of Teutonic to the South European languages, it can hardly be doubted that, whether alone or along with Celtic, it has much closer relations as regards culture with Latin than with Greek, as Lottner, *K. Z.*, vii. 163, *ff.*, has rightly recognised. In confirmation we may call to mind such equations as, in the matter of agriculture: Lat. *hordeum*, O.H.G. *gersta*, Lat. *far*, Goth. *barizeins*, Lat. *arāre*, Goth. *ais*, Lat. *flōs*, O.H.G. *bluomâ* (Ir. *blâth*), Lat. *porca*, O.H.G. *furh* (Ir. *orc*), Lat. *sulcus*, A.S. *sulh*. In the animal kingdom: Lat. *piscis*, Goth.

fisks (Ir. *iasc*), Lat. *hædus*, Goth. *gaits*, Lat. *caper*, O.N. *hafr* (G. κάπρος, "boar"), Lat. *sturnus*, O.H.G. *stara*, Lat. *picus*, O.H.G. *specht*, Lat. *merula* (**misula*), O.H.G. *meisa* (or O.H.G. *amsala*). Trees: Lat. *ulmus*, O.N. *álmr* (Ir. *lem*), Lat. *corulus*, O.H.G. *hasala* (Ir. *coll*), Lat. *quercus*, O.H.G. *ferha*, Lat. *salix*, O.H.G. *salahha* (Ir. *sail*, though also G. ἑλίκη), Lat. *acer*, O.H.G. *âhorn* (though also G. ἄκαστος). Water and sailing: Lat. *lacus*, A.S. *lago* (Ir. *loch*), Lat. *aqua*, Goth. *ahoa* (Celt. *-apa*), Lat. *mâlus*, O.H.G. *mast* (Ir. *matan*, *maite*, "club, stick"). Political and constitutional: Osc. *touto*, Umbr. *tutu*, Goth. *þiuda* (Ir. *tuath*, though *cf.* also Lith. *Tauta*, "highlands"), Lat. *cîvis*, Teut. **hîwa-*, Lat. *tribus* (Cymr. *tref*), O.H.G. *dorf*, Lat. *lex*, O.N. *log* (**legen*, as θέμις = τίθημι), Lat. *manus* (*in manum venire*), O.H.G. *munt* (Mid. Lat. *mundium*). Weapons, implements, &c.: Lat. *arcus*, A.S. *earh*, Lat. *hasta*, Goth. *gazds*, Lat. *cornu*, Goth. *haúrn* (κάρνον τὴν σάλπιγγα, Γαλάται Hes.), Lat. *ferrum*, Eng. *brass* (?), Lat. *cribrum*, O.H.G. *ritara* (Ir. *criathar*). Miscellaneous: Lat. *annus*, Goth. *aþn* (or *asans*), Lat. *vâtes*, A.S. *wód* (Ir. *fáith*), Lat. *sons*, O.H.G. *sunta* (but, perhaps, also G. ἄτη; cf. *K. Z.*, *N. F.*, x. 467), Lat. *gelu*, Goth. *kalds*, Umbr. *nertro*, "left," O.H.G. *nord* (though also G. νέρτερος), Lat. *vêrus*, O.H.G. *wâr* (Ir. *fîr*), Lat. *cæcus*, Goth. *háihs* (Ir. *cæch*), Lat. *helvus*, O.H.G. *gelo*. Some verbs peculiar to Latin and Teutonic are: Lat. *habeo*, Goth. *haban*, Lat. *sileo*, O.H.G. *silan*, Lat. *taceo*, Goth. *þahan*, Lat. *erro*, Goth. *airzjan*, Lat. *tongere*, Goth. *þagkjan*, Lat. *vinco*, *vici*, Goth. *veiha* (Ir. *fichim*).

These equations, which might be considerably increased in number—we have not aimed at completeness here—especially if we added the Slavo-Teutonic-Italic equations, are undoubtedly opposed by points of contact peculiar to Teutonic and the Hindu-Persian languages (*cf.*, *e.g.*, Goth. *aúhsa* = Sans. *ukshán*; Goth. *haíru* = Sans. *çáru*, "weapon," "missile;" O.N. *verr* = Sans. *carú*; Ir. *coir*, "kettle," &c.), and to Teutonic and Greek (*cf.*, *e.g.*, G. κῆπος = O.H.G. *huoba*; G. φώγω = O.H.G. *bahhan*; G. μέλδω = O.H.G. *smelzan*, &c.). Such equations will be perhaps increased in number by future research; but it is extremely improbable that they will equal in number or importance the equations peculiar to Latin and German given above.

If, then, in this way Latin is brought nearer to Teutonic, or rather Celto-Teutonic, this is quite in harmony with the fact that the agreements peculiar to the vocabularies of Greek and Latin are of a more subordinate kind than is generally assumed. Indeed, long ago the divergence of the two languages in important departments of their vocabulary has been noticed. O. Müller in his *Etruscans* (*cf.* above, p. 35) remarked that the Latin words for grain and weapons are "non-Greek;" V. Hehn brought out the differences between the two languages in their weaving and agricultural terms; W. Helbig in fishing and metallurgy; Osthoff (*Quæstiones mythological.*) and O. Weise (*Griech. Wörter im Lat.*, p. 314) call attention to the divergence in the mythological names of the two peoples.

As a matter of fact there are not many equations—and those are not very important—to be thrown into the scales in favour of the assumption of a Græco-Italian period. There are to be noted some names of animals, especially of birds: (G. *θήρ*, Lat. *ferus*), G. *χήν*, Lat. *hērnāceus*, G. *κῆτος*, Lat. *squālus*, G. *ψάρ*, Lat. *pārus*, G. *ἔπολψ*, Lat. *upupa*, G. *ἐρυθρός*, Lat. *ardea*, G. *ἀλκυών*, Lat. *alcēdo* (all very unsafe or else onomatopoetic). Some names of plants: (G. *ὕλη*, Lat. *silva*, G. *ῥάξ*, Lat. *frāgum*, G. *ἄβιες ἐλάτηι* (Hes., but with no ethnicon), Lat. *abies*, G. *κρανός*, Lat. *cornus*, G. *ἶξος*, Lat. *viscum*. Miscellaneous: G. *νέω*, Lat. *neo* ("to spin," though *cf.* Ir. *snáimaire*, "spindle"), G. *στήμων*, Lat. *stāmen* (though *cf.* Lith. *stãklė*, Sans. *sthāvi*), G. *σκαιός*, Lat. *scævus*, G. *ἀλφός*, Lat. *albus* (though *cf.* O.H.G. *alba*, O.S. *lebedi*, "swan"), G. *ἶτυς*, Lat. *vitus*, G. *πόλτος*, Lat. *puls* (though *cf.* G. *παιπάλη*, Sans. *pálāva*), G. *ἰμαλία*, Lat. *simila* (?), G. *τέρμων*, Lat. *terminus* (though *cf.* Sans. *tárman*), G. *τέμενος*, Lat. *templum* (roots alone related), G. *φώρ*, Lat. *fūr*, G. *ἕλκος*, Lat. *ulcus*, G. *κλής*, Lat. *clāvis*, G. *ῥῖγος*, Lat. *frīgus* (or *vigor*?), G. *γάλακτ-*, Lat. *(g)lact-*, G. *ἐλεύθερος*, Lat. *lŏbertas*, *liber*. It is to be further noted that in many cases, indeed even in some of those just cited, in consequence of the early and intimate historical relations of the Romans to the Greeks, the question whether an equation is due to primeval affinity or to borrowing cannot be decided with certainty, as G. *δεῖσαι* = Lat. *dēpsere*, G. *μῆλον* = Lat. *mālum*, G. *ἴον* = Lat. *viola*, and many others. Even with the important *λείβειν* = *lībare*, which I cannot absolutely regard as borrowed (because of *dēlībātus*), the case may be that the ceremonial meaning of the Latin word was determined by Greek influence. So too, possibly, with G. *σπένδω* = Lat. *spondeo* (to conclude a treaty).

There is a complete want of certainty also about the mythological equations which are confined to Latin and Greek. Passing by the extremely dubious *Jānus* = *Ζάν* (J. Schmidt, *Verwandtschaften*, p. 54; *cf.* G. Meyer, *Griech. Gr.*², § 324) and *Liber* = Λειβήνος (Hesych. without an *ethnicon*; *cf.* Gruppe, *Griech. Kulte und Mythen*, p. 82), as well as *Di(v)āna* = Διώνη, the roots alone of which are related, we will only briefly discuss the equation alluded to above, Ἑστία = *Vesta*, which in quite recent times has again been put forward as an argument for the close kinship of the Greeks and Italians (*cf.*, *e.g.*, B. Leist, *Græco-ital. Rechtsgeschichte*, p. 181). The ancients themselves, however, derived the name of the goddess from Greece (Cicero, *De nat. deor.*, ii. 27, 67), and therein are followed by modern students such as Grassmann and Osthoff (*loc. cit.*, p. 7). On the probability that the cultus of Vesta was borrowed from Greece, see Gruppe, *loc. cit.*, p. 84, *ff.*

But even if we adhere to the primeval affinity of the two words, it will be well not to over-estimate the force of this equation. Ἑστίη is not, in the mouth of Homer, by any means a goddess; she is only the sacred fire of the hearth, which is used in adjurations, just as is the table of the guest:—

ἴστω νὺν Ζεὺς πρῶτα θεῶν ξείνη τε τράπεζα
ἑστίη τ' Ὀδυσῆος. Od. xiv. 158.

The sanctity, however, of fire in general, and of the fire of the hearth in particular, is an idea which must be regarded as common to all Indo-Europeans (*cf.* Part iv. ch. xiii.).

Things are very different when we turn from the comparison of the Greek and Roman vocabularies to that of the Greek and Hindu-Persian. I should be inclined to believe that the satisfactory equations of these two languages are in importance about comparable with the agreements confined to Latin and Teutonic, or Celto-Teutonic, which have been discussed above.

With especial frequency, the closer connection of Greek with Hindu-Persian displays itself in names of weapons, which we have collected elsewhere (Part iii. ch. x.), and therefore may omit here. To them may be added in the matter of agriculture: G. τέλσον, Sans. *karshŭ*, Zend *karsha*, "furrow," Lac. εὐλάκα, G. ἄλλαξ, Sans. *vṛka*, "plough," G. ἄρουρα, Sans. *urvárá*, "ploughland" (?). Of habitations: G. πόλις, Sans. *pur*, G. ἄστυ, Sans. *vâstu*, G. μάνδρα, Sans. *mandurá*, "stall." Of the family: G. δεσπότης, Sans. *dámpati*, G. πότνια, Sans. *pátnî*, G. πενθερός, Sans. *bándhu*, "relation." Of crime and punishment: G. ἄγος, Sans. *ágas*, G. τίνομαι, ποινή, Sans. *ci*, Zend *ci* (*kaénâ*). Of implements: G. ἄτρακτος, Sans. *tarkú*, "spindle," G. ξυρόν, Sans. *kshurá*. Of animals: G. ὄρτυξ, Sans. *vartaka*, "quail," G. ἰκτῖνος, Sans. *çyêna*, Zend *saêna* (though Armen. *çin*), G. κύκνος, Sans. *çakuná*, G. πεμφρηδών, Sans. *bambhara*, "bee" (?), G. ἄρρην, Sans. *ṛshabá*, "male animal;" *cf.*, further, G. ἔθρις, Sans. *vádhri*, "gelded," G. κόγχη, Sans. *çaṅkhá*, "mussel." Miscellaneous: G. χίλιοι, Sans. *sahásra*, Zend *hazaṅra*, G. ἄνθος, Sans. *ándhas*, G. κῦρος, Sans. *çúra*, G. τέκτων, Sans. *tákshan*, G. ῥέζω, Sans. *vañj*, "to colour," G. χέω, Sans. *hu*, G. ἅγιος, Sans. *yaj*, Zend *yaz*, G. ἦρα ψέρειν, Sans. *vâra bhar*, G. ἠΰς, Sans. *âyú** (Collitz, *K. Z.*, xxvii. 183). Finally, there must be added a string of mythological proper names, which, for reasons to be stated later (Part iv. ch. xiii.), we do not regard as generally very conclusive, and sometimes not as altogether certain phonetically, but which have an advantage in that the suspicion of borrowing is excluded in their case. They are: Οὐρανός, Sans. *váruṇa*, G. Φλέγυες, Sans. *bhṛgu*, G. Τριτο- in τρίτων, τριτογένεια, Sans. *tritá*, G. Ἑρμῆς, Sans. *sarámâ*, *sarameyá*, G. Ἐρινύς, Sans. *saranyû*, G. Ἄκμων, Zend *asman*, "heaven," G. Ἀπόλλων, Cypr. Ἀπείλων, Sans. *saparyêṇya*, "Vedic epithet of Agni" (*cf.* L. v. Schröder, *K. Z.*, xxix. 193), G. κένταυροι, Sans. *gandharvá*, &c.

Incidentally we may remark that in isolated cases Greek also has equations peculiar to itself and various other Indo-Germanic languages, with Lithuanian (G. ῥάπτω, "stitch," Lith. *werpù*, "spin"), with Lithu-Slavonic (G. χαλκός, "bronze," Lith. *gelézis*, O.S. *želězo*, "iron"), and Celtic (G. δῆμος, "people," Ir. *dám*, "followers").

Looking, however, at the above facts as a whole, one cannot help saying at least that the two classical languages, as far as our present

* If, as used to be thought, Sans. *vásu* is rather the corresponding word, Ir. *fíd*, "worthy," must be brought in, and consequently we shall not have a Græco-Hindu-Persian equation.

knowledge extent is, cannot, as regards equations which are important for the history of culture, and which are peculiar to those two languages, be compared with the equations confined on the one hand to Latin and Celto-Teutonic, and on the other to Greek and East-Indo-Germanic.

A more certain, and, as we shall subsequently see, a more important point for the right comprehension of primeval Indo-Germanic history is the fact long known and recognised, that the Indo-Europeans of Europe, the Western Indo-Europeans as a whole, in contradistinction to the Hindu-Persians, are bound together by such important and such numerous points of agreement between their vocabularies, in many departments of the history of culture, that we have a right to speak of a common European culture. The first to call attention to this were Lottner and Fick (*supra*, p. 55); their only mistake was that they explained this common European culture as being the same thing as a common European language. It is, however, at the present day beyond a doubt that new formations common and peculiar to the European languages, the strictest criterion of close linguistic affinity, have not yet been discovered, and probably will not be discovered.

A common culture and identity of language are two ideas which may but do not necessarily coincide (*cf.* above, p. 72). When the Western Indo-Europeans evolved such words as *ἄρρω, μῆλον, ἄγρός, ἀγγός, ἄς*, etc., the Slavo-Lithuanians and Albanians may have been distinguished in the pronunciation of the palatal *k* series, which they shared with the Hindu-Persians, from the Teutons, Celts, Italians, and Greeks; so, too, even at that period the Greeks agreeing with the Hindu-Persians may have given a different tone to the nasal vowels (*n, m*) from the rest of the Western Indo-Europeans. Again, as the result of previous local contact with the Hindu-Persians, the Greeks may have brought to the common European culture elements of civilisation, which are perhaps partially mirrored in the above collection of Graeco-Hindu-Persian equations.

A striking parallel to this may be borrowed from the affinities to each other of the Finnic-Ugrian languages, treated of by J. Budenz in *B. B.*, iv. 192, *ff.* In this family of speech the largest number of points of contact occur between the vocabularies of Finnic and Lapponic, which two languages accordingly in earlier days were classed together as being closely connected. Budenz now shows by means of phonetic tests that this was a mistake, that the two languages in question rather belong to two different branches of the fundamental Ugrian tongue—Finnic to the South Ugrian, Lapponic to the North Ugrian. The undeniably great affinity of the vocabularies of the two languages arose, during the period of geographical contact between the two linguistic areas, from loans on both sides, especially on the part of Lapponic (p. 243), in a word from the assimilation of the vocabularies of the two languages which were originally two distinct dialects. We may imagine a similar process going on in the area of the

common European culture. In what quarters it shows itself conspicuously we shall see subsequently. Here we will do nothing more than refer to the likewise indubitable fact that one Asiatic language, Armenian (*cf.* above, p. 70), must originally have been included in that area.

As regards the chronology of this connection of the Western Indo-Europeans with one another in the history of culture, nothing naturally can be said; nor can it be dated relatively to the period when the Eastern Indo-Europeans dwelt together. The idea of ploughing may have been expressed by the former in their verb, G. ἀρόω, at the same time as by the latter in their verb, Sans. *kṛṣ*; but the two linguistic actions may belong to totally different periods.

Remains the question, in how many languages must an equation be established to be regarded as being primevally Indo-Germanic? From all that we have said, it is clear that it is as yet impossible to lay down any hard and fast rule which will apply to all cases. Words which can be established as existing in all or nearly all Indo-European languages, such, for instance, as the Indo-Germanic expressions for winter, moon, night, red, for many kinds of animals, many terms of kinship, the numerals up to 100, &c., will always be amongst the most certain constituents of the primeval vocabulary. For the rest, it follows from the previous remarks, that a series which on one hand is native to the Hindu-Persian tongues, and on the other is deep-seated in the European languages (especially in those which do not lie under the suspicion of having any close connection with the Eastern Indo-Europeans), a series such as Ir. *crenim*, G. πρίαμαι, Sans. *krīṇāmi*, "buy," or Goth. *áiz*, Lat. *æs*, Sans. *áyas*, Zend *ayañh*, &c., has a well-founded claim to the highest Indo-European antiquity.

In all questions as to the affinities of the Indo-Germanic languages, however, we must never forget that we are working with materials which do not allow of the complete solution of all difficulties: from the chain of Indo-Germanic languages whole sets of links, such as Macedonian, Thracian, Illyrian, the connecting link between north and south, Phrygian and Scythian, the transition for east to west, are almost totally and irretrievably lost.

CHAPTER IV.

THE FORM OF WORDS.

The phonetic form of equations that are available for the history of culture—Limitations in the employment of words identical in root, but differing in the formation of their suffixes—Caution even against equations which completely correspond—Original meaning of certain suffixes—Onomatopœia.

So far we have devoted our attention exclusively to the geographical distribution of equations, important for the history of culture, and to the conclusions which one is or is not justified in drawing from them; now we must proceed to consider somewhat more closely the phonetic form of the material available.

We have seen that A. Kuhn (*cf.* above, p. 36) had already laid it down that a series of words, in order to show the existence of a civilised concept in the primeval Indo-Germanic period, must be etymologically connected, not only in their root, but also in their suffix syllables; and no one will deny that, as a matter of fact, equations such as Sans. *áçva*, Lat. *equus*, &c. (Indo-G. **ek-vo*), Zend *kaêuá*, G. πουή, &c. (Indo-G. **quoi-nâ*), Sans. *áĝra*, G. ἀγρός, &c. (Indo-G. *ag-ro*), which agree most completely down to the stem and suffix-syllables, are amongst the most undeniable constituents of the Indo-Germanic vocabulary. Every one knows, however, that instances of this kind are not of the commonest, and the question now arises, whether absolutely every series of words, which are etymologically connected, but show differences in the root-syllable or in the formation of their suffixes, or in both, is valueless for inferences as to the primeval Indo-Germanic period. In the first place no one will wish to assert this of equations, in which the points of difference are so far regular in that they are due exclusively to the fact that the individual languages have generalised modifications of the stem which figured in an Indo-Germanic paradigm. Thus, in individual languages these stems—Goth. *fôtu-*, G. πόδ-(πόδ-ά), Lat. *ped-* (*ped-em*)—occur side by side, and require no other explanation than that in the Indo-Germanic counterpart of this word, the stems *pôd-*, *pod-*, *pĕd-* were the modifications which appeared in the regular declension of the word. The same

holds of Goth. *hairtō* by the side of G. *καρδία*,* Lat. *cord-* (Indo-G. *kerd-* : *krd-*).

The same explanation may account for Goth. *gulp* (**ghlto*) and O.S. *zlato* (**ghelto*). The original paradigm may have been declined **ghelto-m* (O.S. *zlato*), *ghlt-eso* (Goth. *gulpis*), &c.

As regards the formation of their suffixes, O.S. *jelen*, "hart," and G. *ἔλ-αφος* seem to be widely separate. But if the latter is referred to a fundamental form, **el-ĝ-bho*, it is evident that a stem, **el-en* : **el-n*, must have been present in Greek, which was then expanded by the addition of the animal suffix *-φο*. In the same way the different forms of the Indo-Germanic word for "winter" can be brought into an Indo-Germanic paradigm, the "gradations" (*Ablautstufen*) or "variations in the radical vowel" of which were probably **ghi-ĕm-* (G. *χεῖμ-*), **ghi-em-* (Lat. *hiems*), **ghi-ens* (Sans. *hēman*), and **ghi-n-* (O.S. *zima*), &c. (*cf.* Brugmann, *Grundriss*, ii. 153).

Nor, again, need the historian of culture harbour any suspicion about cases of such daily occurrence in the life of language as, *e.g.*, a mere change from one gender to another or from one declension to another, or things of that kind—*e.g.*, Lith. *szirdis*, fem. : Lat. *cordi-*, neut. "heart;" G. stem *νυκτ-* : Sans. *nákti-* (and *nakt-*), Lat. *noct-*, "night;" G. stem *ἀξον-* : Sans. *ákṣan-*, Lat. *axi-*, "axle," &c. Or, if in another instance one looks through the different forms of the stem in *e.g.*, the name for dog which runs through all Indo-Germanic languages—Sans. *śvā*, st. *śvan* and *śun* : G. *κύων*, st. *κυον* and *κυν* : Lat. *can-* : Teut. *hund*—one cannot doubt that these words derive from an identical and primitive formation, and that Teutonic (by the addition of *-d*) and Italian (by the transition of the stem *can-* (*kvn-t*) into the *-i* declension; *cf.*, however, *can-is*) have departed from the original form of the stem preserved in Greek and Sanskrit. All these instances then are beyond a doubt available for the history of culture, and though it is often possible to dispute which form is to be imputed to the original language, and though indeed this point may never be settled in certain equations as Lith. *ožỹs* : Sans. *ajá-*, "goat, he-goat," or G. *χήν*, Sans. *haṁsá-s*, Lat. *anser*, &c., this cannot possibly deter the historian of primitive culture from assuming that in the original Indo-European language words did exist for heart, night, axle-tree, dog, and for a goat-like and a goose-like creature (*cf.* ch. v.).

Now, how stands the case with those equations in which, quite apart from the etymological identity of the root-syllable, there is no correspondence whatever in the formative syllables, but rather wide and irreconcilable difference? One will at first be inclined to exclude instances of this kind as not suitable for exact inference about Indo-Germanic language and culture; for if one reflects on the exuberant growth of suffixes that continues to confront us even

* The modification *kerd* in my opinion is represented in Greek by *κέρδος*, which originally meant not "profit" but "cleverness." *Cf.* *φρένες* and *πραπίδες*, "midriff" and "intelligence," *χόλος*, "gall" and "anger," &c. In *κερδαίνω* (*κερδαν-jω*) the *n*-stem of the Teutonic (Goth. *hairtin-*) reappears.

in the historic periods of language, there is something extremely precarious in ascribing a given civilised concept to the original language on the strength of an equation which not a single trace of etymological connection in the formation of the stem and suffix stamps with the mark of Indo-European coinage. Numerous Indo-Germanic terms for bed may derive from a common root, *star*, "to spread out," or *kei*, "to rest," and countless terms for chair from one and the same root, *sed*, "to sit" (*cf.* A. Pictet, *Origines*², ii. p. 346, *ff.*); but these facts have something so natural about them that it is impossible to infer from them the existence of those objects in the original language. Nevertheless, I think, here too we must distinguish. In each particular case it will be necessary to decide whether it is probable that it is a mere coincidence that two or more languages have selected the same root for the designation of a given idea.

Though the nurse is called in Greek τι-θή-νη, and in Sanskrit *dhā-trī*, the living presence of the verbs θή-σασθαι and *dhā* in the two languages will prevent anyone from assuming an Indo-Germanic prototype for these words. Somewhat different is the case with two equations such as G. πεν-θερός, "father-in-law" (also "son-in-law"): Sans. *bandhu*, "kinsman," and G. τάλαντον, "scales": Sans. *tulā*, ditto. The roots are in the one case our *bind* = Sans. *bandh*, "to fetter" (he who is bound by the bond of kinship), in the other probably Sans. *tul* (*tōlāyati*), Lat. *tuli*, "to lift up on high," as lifting a thing was the first way of trying to weigh it. Now, of these two verbs the former has left in Greek nothing but traces (πεῖσμα, *πενθ-σμα, "cord"), and the latter only occurs in a transferred meaning (τλῆναι, "to endure"). In any case, then, the formation of words such as πενθερός, τάλαντον must belong to a prehistoric period, in which the roots *πενθ- and *ταλ- (in the sense of "carry") still possessed in Greek a generative power. The relatively greatest claim to being considered primeval is naturally enjoyed by those equations with divergent suffixes for which no stem-verb can be discovered in Indo-Germanic at all, such as G. βάλ-ανος, Lat. *glandi-*, Lith. *gilė*, "acorn," Goth. *azgō*, "ashes," G. ἐσχ-άρη, "hearth," and many others.

Then, as regards etymologies which rest solely on the identity of the root-syllable, and differ in the formation of their suffixes, it is well to use a certain amount of caution in employing them for the history of culture. Caution, as Th. Benfey has justly pointed out (*cf.* above, p. 38, *ff.*), is not wholly superfluous in the case of equations which are able to show absolute identity of structure both in the root-syllable and the suffix.

The suffixes of a language, as is well known, fall into two classes: those which having been inherited from the primeval period have in historical times become torpid, and those which have still retained life and formative force. Now, if the same suffix happens to have retained its vital force in two or more languages it may easily occur, assuming the presence of roots etymologically identical, that in relatively late times words were

formed by means of this suffix, which being absolutely identical in sound and syllables have all the appearance of Indo-Germanic or primeval formations. Reviewing Fick's catalogue of the original language from this point of view, one clearly sees that a whole heap of the words he brings forward, and many of them important for the history of culture, must be rejected. Thus an equation such as Sans. *paktár*, "cook" : rt. *pác* = Lat. *coctor* : *coquo*—might lead to the conclusion that *chefs de cuisine* formed a professional class in primeval times. When, however, we reflect that both verbs as well as the suffixes *-tar* and *-tor* still retained a fresh and vigorous life in Sanskrit and Latin times, we cannot doubt that we have here to do with a chance coincidence; and this is further indicated in this instance by the relatively late occurrence of the word, at least in Latin. The same reflection applies to such a series of words as Sans. *jñâtár* : *jñâ*, γνωστήρ : γιγνώσκω, Lat. *notor* : *nosco*, "one who knows, a surety," which, if it held water, would impute an important legal conception to primeval times. In another legal expression, too, Sans. *ápaciti*, "recompense"—rt. *ci* = G. ἀπότισις : τίνω—it is probable that in both languages we have a casual agreement produced by the still living suffix *-ti*, *-σι*.*

In other cases it is very difficult to determine whether an equation is or is not casual as regards agreement in the formation of the suffix. Are we, for example, on the strength of an equation such as Sans. *tákshan* = τέκτων, "carpenter," to ascribe this idea to the period of primitive culture, and consequently to assume the existence of a definite class of artisans in the most ancient stage of Indo-European evolution? The verbal root *taksh*, τεκτ- (in τεκταίνομαι), still exists in both languages; while, on the other hand, the suffix *-ān*, *-an* = -ων, -ον (*cf.* Bopp, *Vgl. Grammatik*[3], iii. p. 287), as a means of forming *nomina agentis* directly from the verb, can hardly be said to live either in Greek or in Sanskrit. But is it then utterly impossible that the suffix in question may have possessed formative force in a period of the separate history of Greek and Sanskrit of which we have no record? Or was the meaning of the suffix *-ān* = -ων in primeval times such that in conjunction with a verb it indicated not so much those who do something permanently and professionally as those who occasionally employ themselves on a thing, as in Homer the epithet ἡνίοχος, "reinholder," is applied even to Hector, when he for once takes the reins in hand, and as those who on a single occasion are ordered to hew wood are called ὑλοτόμοι, "hewers of wood?" So, too, the G. ποιμήν = Lith. *piemů*, may originally have meant not shepherds by occupation, but those who on some single occasion pastured the herds.

* In the case of some equations with the suffix *-ti* the casual nature of the correspondence may also be shown by the phonetic history of the words. If, *e.g.*, the G. τέρψις (τερπ-σι) corresponded directly to the Sans. *tṛp-ti*, then, since there is in this case no reason for the change of τ into σ, the Greek word must have been *τερπ-τις or *ταρπ-τις; τέρψις was then obviously first formed on Greek ground, after the analogy of numerous nouns in -σι, from τέρπω, τέρπομαι (= *tṛp*).

This scepticism, which is such as to cast suspicion on almost every etymological equation, is perhaps pushed too far. For all that, it is useful to keep every linguistic possibility before our eyes in order to guard against hasty conclusions.

Finally, we have here to mention equations which owe their existence probably or possibly to accidental coincidences due to onomatopoiesis. In this class we must first of all rank a series of birds' names such as Lat. *ulucus* : Sans. *ûlûka*, "owl," Sans. *kokilâ*, G. κόκκυξ, Lat. *cuculus*, O.S. *kukavica*, Lith. *kukùti*, I. *cûl*, and others, which may well have been formed for the first time in the separate languages by imitation of the cry (*cf.* Part iv. ch. ii.). Perhaps the equivalent names for the domestic fowl, which can hardly have been known in primitive times (*cf.* above, p. 36), such as *kṛka-vâku*, "he who says *kṛka*" (the Vedic name for the domestic fowl) : G. κέρκος (Hesych.) or *kakkatâ* (also Vedic) : O. Sl. *kokotŭ*, may have arisen in the same way. This does not exclude the possibility that a form originally onomatopoetic may be framed by the action of phonetic laws into the shape of a regular substantive. *Cf.* Goth. *hrûk*, "cock-crow" : κέρκος; L. *cerveta*, *gallinaceus*, &c.; O.H.G. *hehara* : G. κίττα (**kikja*) : Sans. *kikidîvi*, "blue woodpecker," &c. So, too, with a series of onomatopoetic formations in the way of names of kin, to which likewise we shall subsequently return (Part iv. ch. xii.).

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CHAPTER V.

THE MEANINGS OF WORDS.

The original meaning of words etymologically equivalent—Difficulty of establishing it—The root of an equation useless for the history of culture—Names of kin—Modern meanings foisted on to ancient words—Verbs expressing the pursuit of certain crafts—Names of plants and animals in the original language—Equations bearing on the history of cults and religion.

Before an etymological equation can be employed as the corner stone on which to build a history of Indo-Germanic culture, we have carefully to examine its geographical distribution and the antiquity of its grammatical structure. But this examination by no means suffices to eliminate all the errors to which the historian of culture is exposed in his use of linguistic material. Etymological research into the Indo-Germanic vocabulary is nearly exclusively content to establish the original grammatical form of a word; the question as to its original meaning receives but superficial treatment as a rule. And yet all will admit that for the history of culture it is on this point that everything turns.

A. Kuhn has already (*cf.* above, p. 18) set forth the difficulties which arise when the individual links in an etymological chain have different meanings in different languages. That G. δρῦς, "oak," O.I. *daur*, "oak"; Sans. *dru*, "tree," Goth. *triu*, "tree," &c., are related is certain, and yet the question whether the original meaning was "oak" or "tree" hardly admits of solution. So, too, G. ὄρνις, "bird," and Goth. *ara*, "eagle," A.S. *earn* (*cf.* O.S. *orĭlŭ*; Lith. *erēlis* and *ėri-s*, "eagle") correspond; but, again, whether "bird" or "eagle" was the original meaning can hardly be ascertained.

In other instances it is possible to attain a certain amount of probability, as we shall see is the case with G. φηγὸς, "oak": Lat. *fagus*, German *buche* (*cf.* Part iv. ch. iv.). So, too, the meaning of a family of words such as G. ὥρα, "summer" (in ὀπ-ώρα), Zend *yâre*, "year," Goth. *jêr*, Bohem. *jaro*, "spring," may be fixed with some certainty as being that of the German *lenz*, "spring" (*cf.* Part iv. ch. vi.). In both cases, however, the decisive considerations were furnished not by philology but by the general history of culture, or rather by the geography of plants.

But even series in which all the words have the same meaning may not be used for the history of culture without criticism.

To begin with, we must make an end of a practice which Justi (*cf.* above, p. 22), Max Müller (*cf.* above, p. 25), and especially A. Fick (*cf.* above, p. 36), have carried to the greatest lengths, the practice of borrowing touches for our picture of primitive civilisation and culture from the meaning of the root of an equation. Names of kin have afforded the favourite field for those exercises of the imagination which have converted the father into the "protector," the mother into the "managing housewife," the daughter into the "little milker," the brother into the "supporter," the brother-in-law (*śaṃp*) into the "playfellow" (as the younger brother of the husband), the sister into "she who dwells with him" (the brother), and so on. People should remember how extremely uncertain such idyllic interpretations are as a rule. Whether *mātár* means the "managing housewife" or the "maker" (of the child), whether *duhitár* means the "milker," "the suckling," or "she who gives suck," and *sūnú* "the begetter" or the "begotten," and so on, all these questions are more than uncertain and will never be answered.

In the next place, a simple consideration is enough to show that these forms, even if rightly interpreted, afford no criterion whatever for Indo-Germanic culture at the time which interests us here, *i.e.*, at the period immediately preceding the dispersion of the Indo-European languages. For instance, if *bhráter* really belongs to the root *bhar*, and means the "supporter" (sc. of the sister), this view of the relation of brother to sister must appertain to a period when the language was just emerging from the stage of bare roots, and was beginning to become inflectional. This period, however, may have been many thousand years more remote than that which we understand by the "prehistoric unity of the Indo-European peoples," and there is nothing whatever to show that the Indo-Europeans before the dispersion were not quite as ignorant of the connection in grammar and meaning between the name brother and the root *bhar*, as the Greeks were of the relation φρήτηρ, φέρω, or the Romans of *frater*, *fero*, or the Germans of *bruder*, (*ge*)*baren*, &c. Besides, there is a much more attractive explanation of the names father and mother indicated by O. Böhtlingk in his Jakutic grammar (1851), p. vii. If one takes into consideration the probability that names for father and mother existed in all stages of language, and reflects on the extraordinary accordance of the sonorous and significant Indo-Germanic *p(é)-tér* and *mā-ter* with the more onomatopoetic *papa* and *mamma* of nearly every language of the globe, it is hard to suppress the suspicion that the Indo-Germanic words are only fuller and more developed forms of immeasurably earlier names for father and mother.*

Another error common in employing the evidence of language for the history of culture consists in reading modern meanings into ancient words, in pouring new wine into old bottles. An example from the history of a modern language will show my meaning.

* *Cf.* the St Petersburg Sanskrit Dictionary, s.v. *pitar*, and H. Sayce, *The Principles of Comparative Philology*, 1875, p. 224. *Cf.*, also, Sir John Lubbock, *The Origin of Civilisation*, 1875, p. 360.

The English verb *write* is, of course, identical with the A.S. *wrîtan*, O.N. *rîta*, O.H.G. *rîzan*, "to make clefts or cuts," and there is no doubt that this verb mainly was used to designate the process described by Tacitus in ch. x. of the *Germania*, where he speaks of cutting certain signs (runes) on small pieces of wood for the purpose of casting lots. But every one will admit that it would be mere folly on the strength of the modern meaning of the English verb to impute the art of writing to the primeval Teutonic period.

Yet Indo-Germanic equations are often misinterpreted in this very way. G. πόλις, "town" = Sanss. *pur*, *purî*, *pûra* (post-Vedic), "town," has given rise to the idea that the Indo-Europeans before the dispersion lived in towns with streets, fortified with wall and ditch; and yet, than this, nothing could be more preposterous. In the Vedic hymns, as H. Zimmer has conclusively shown, *Altindisches Leben*, p. 142, *f.*, the *pûr-as* are nothing more than "strongholds situated on high ground and strengthened by earthworks and ditches, whither in time of danger (of war or floods—the only occasions on which these places were occupied) the inhabitants betook themselves with their goods and chattels." Towns are never mentioned in the Vedas. The same remark applies to the age of the Avesta (W. Geiger, *Ostîran. Cultur*, p. 412, *f.*), and the Greek πόλις in all probability was originally used in the sense solely of ἀκρόπολις. That the Teutons and Slavs were entirely unacquainted with towns, and indeed with stone-buildings of any kind, is proved to demonstration by indisputable arguments from language, history, and archæology. At the very most, then, all that we could infer from the equation πόλις = *pûr* would be that the Indo-Europeans (or, strictly speaking, the Hindu-Persians and Greeks) before their dispersion had learned to protect themselves by earthworks after the fashion of the Vedic *pûras*, nothing more. There is more difficulty in ascertaining the original meaning of another series of equations, which are important for the political constitution of the Indo-Europeans, such as Sanss. *vêçi*, "house," G. οἶκος, ditto, Lat. *vîcus*, "quarter, village," Goth. *veihs*, "hamlet," O.S. *vîsi*, "estate," Umbr. Osc. *touta*, "town," O.I. *tuath*, "people," Goth. *þiuda*, "people." Celt. *dunum* (in proper names), "town," Eng. *town*, O.S. *tûn*, "enclosure," L. *trêb*, "dwelling, tribe," O. Sax. *thorp*, "village," Goth. *paúrp*, "filth" (*cf.* Curtius' *Grundz.*[5], p. 227), &c. (*cf.* Part iv. ch. xii.).

Another equation which has been made to imply a great deal more than it really means is Sanss. *pátní* = G. πότνια, "lady, wife, exalted one." A. Fick, *Spracheinheit*, p. 226, remarks: "As Benfey (*cf.* Preface to the *Wörterb. d. Indog. Grundspr.*, by A. Fick, p. viii.) first perceived, this designation enunciates the complete equality of woman; polygamy and the servitude of the wife are consequently absolutely foreign to the Indo-Europeans," and so on. Now, granted that this Hindu-Persian-Hellenic equation is evidence for the primeval Indo-Germanic period, granted also that the word did really at that time, as it does in Sanskrit, mean lady and wife,*

* In Greek the only meanings which can be established are "mistress," *e.g.*, Ἀρτέμιδι πότνια θηρῶν, ii. xxi. 470; and "the exalted," πότνια Ἥρη, &c., not

we have no argument against the existence of polygamy in the primeval Indo-Germanic period; whereas, as we shall see further on, history affords many considerations in favour of its existence. Admitting that *pátnî* in the age of the Vedas does beyond all possibility of doubt mean "lady, wife," yet, for all that, polygamy can be demonstrated to have existed at this period. So if *pótnia* was a complimentary term in the primeval period, and was not like the Lith. *patì : pàts*, "wedded wife," "wedded husband," a mere feminine: *potis*, meaning nothing more than "she who has a master" (*cf.* Sans. *sapátnî*, "having the same master, concubine," *B. R.*), for all that, in a polygamous society the word may very well have meant the head or favourite wife of her lord. The Rigveda, x. 159, for instance (Zimmer, *Altind. Leben*, p. 159), contains an incantation in which a king's wife endeavours to make a concubine innoxious and find less favour than herself in the eyes of their lord.

Equally hazardous is it in my opinion to infer that because the Sans. *pádh*, Zend *paðha*, and G. πούς agree in meaning a metrical foot, therefore metre existed amongst the Indo-Europeans. *Cf.* above, p. 28.

Two classes of words there are, however, which above all others are liable to have a modern meaning substituted for their ancient sense. The first consists of a number of names of actions, which seem indeed to have been names for arts practised in the primeval period, such as Sans. *pac*, Slav. *peką*, G. πέσσω, Lat. *coquo*, "cook;" Sans. *vabh* (*vap*), G. ὑφαίνω, O.H.G. *weban*, "weave;" Sans. *sîv*, Lat. *suo*, Slav. *šiją*, Goth. *siuja*, "sew." That the arts designated by these roots were practised in primeval times is obvious; but surely it is pertinent to inquire, How? The *chef* who prepares an elaborate *menu* by the aid of the latest range "cooks" indeed; but the dirty Eskimo also "cooks" when he puts hot stones into water until it boils, because his vessels of wood or stone will not stand the heat of the fire (*cf.* Sir John Lubbock, *Prehistoric Times*, ii. p. 195). Now, what test can language produce to fix the precise point between these two extremes, to which our ancestors had attained, before the dispersion. We shall, I hope, in the course of our investigation, have opportunities of putting most of these equations on their proper footing as regards the primeval period.

The second class of words, which we have to mention here, consists of a number of names of animals and plants, which by their identity in the separate languages are shown to have existed in the primeval period, but as to which Comparative Philology, as V. Hehn has most forcibly pointed out, is quite incapable of proving that they were known to the Indo-Europeans as domesticated. As, however, we shall have to return to this point and discuss it more fully hereafter, we shall content ourselves here with stating that it is only the history of culture, not Comparative Philology, which can attain approximate certainty on these points.

So far we have drawn our examples on the whole from the history of the material culture of the Indo-Europeans. But the

"wife." *Cf.*, however, δέσποινα, "housewife, lady," in Homer, and δεσπίνας· γυναῖκας Θεσσαλοί, Hesych.

danger of modernising the original meaning of a word is equally great in the case of equations which seem to refer to a moral, legal, or religious civilisation amongst the original people.

The Hindu *dhâman* and G. *θέμις* have this in common, that they are both derived, though in totally different ways, from the root *dhâ* (*τίθημι*), and that the Hindu word occasionally (Institutes of Mitra-Varuna), the Greek word usually, means the divine law (Lat. *fas*) which is above human law. But to use this fact as an argument for ascribing the notion of *fas* to the primeval period, as Leist does (*Græco-italische Rechtsgeschichte*, p. 205), is to put too much confidence in linguistic arguments. With much too light a heart also have gods been imputed to the primeval period on the strength of equations such as Sans. *dyâus*, G. *Zeus*, Lat. *Jovem*, O. H. G. *Zio*. In this connection I agree with O. Gruppe's objection (*Wochenschrift f. kl. Phil.*, 1884, p. 487; *Die griechischen Kulte und Mythen*, p. 79, *ff.*) that—as a matter of language merely—such an equation may originally just as well have meant nothing more than the vault of heaven above the earth.* Though *cf.* further, Part iv. ch. xiii.

So, too, with many terms apparently having to do with the cultus of the Indo-Europeans. G. *χέω*, "pour," (also used for libations), does indeed belong to Sans. *hu*, "to pour into the fire, to offer," but also to Lat. *fundo* and Goth. *giutan*. Whether, however, this root was a ceremonial term in the primeval period is quite another question, the answer to which is by no means to be prejudged owing to the linguistic equation. Again, Lat. *credo* (from **cred-do*) is certainly identical with Sans. *çraddhâ*, "trust, confidence, belief, truth, uprightness." But it is a wholly arbitrary assumption that this word was an expression of *religio* in the primeval period. So, too, the Lat. *purus*, "pure," is undoubtedly derived from Sans. *pû*, "to purify." But how Leist (*Alt-arisches jus gentium*, p. 258) can infer from this that the "historical connection" of the Hindu and Italian doctrine of purification is "linguistically" hereby "made certain"* I cannot see.

* The case is the same when Leist, *Græco-italische Rechtsgeschichte*, p. 214, says: "That as regards Italy also we have to do with a primeval institution (*i.e.*, guest-friendship), is shown by language. . . . There is no possibility of doubting that the Lat. *hostis* is the same word as the German *gast*." But all that this equation shows is that the fundamental meaning of both words is "stranger," and that in a hostile sense. The ideas associated with this word by the Teutonic and the Italian tribes were not, as Leist says, "similar," but in the highest degree dissimilar, and mirror two different stages of evolution in the history of culture, as Ihering, *Deutsche Rundschau*, 1880–85, iii. 364, very justly insists. *Cf.*, further, Part iv. ch. x.

The same scholar says, *Alt-arisches jus gentium*, p. 3: "The core of the demonstration in all researches into the connection of the Hindus, Greeks, and Italians must always be language. When we are dealing, *e.g.*, with the institution of name-giving (to the newborn child), that the ceremonial custom was common to Hindus, Greeks, and Italians may be inferred from the fact that the feast is called *nâmadhêya* (*nominis datio*) in the Sûtras (*cf.* below, § 36 (1) rather 42, note 2)." For our part, we can only infer, as far as language is concerned, that there was an Indo-Germanic word for "name."

We call attention here to cases of this kind because, as we shall see subsequently, Leist is led by them to assume a very high moral culture for the Indo-Europeans—in which we cannot follow him. *Cf.* Part. iv. chs. i. x. xii. xiii.

CHAPTER VI.

LOAN-WORDS.

Original connexion and borrowing—The two things indistinguishable in the earliest times—The employment of loan-words for the history of culture.

THERE remains a last difficulty to mention, which stands in the way of attempts to reconstruct Indo-Germanic culture by means of Comparative Philology. It is the difficulty of deciding with certainty between words inherited from of old and words borrowed at an early period. Our only safe criterion is the regularity or irregularity with which the sounds correspond to each other. We opine that Slav. *chlěbŭ*, "bread," is a loan-word from the Teutonic (Goth. *hlaifs*), because from all that we know of the laws which regulate the relation of Slavonic sounds to Teutonic, a Slav. *ch* and a Goth. *h* cannot be descended from one and the same primitive sound (*k*). Again, we regard the Teutonic words *pfund*, *pferd*, *pfeil*, as not originally connected with the Lat. *pondus*, *paraveredus*, *pilum*, because in High German the sound which corresponds to an ancient *p* is *f* (*fater*, πατήρ), not *pf*, and so on.

But, now, is it inconceivable that in the early history of language a word may have been borrowed by one language from another at a time when the borrowing language had begun, or at any rate had not ceased, to be exposed to the transforming action of important phonetic laws such as the German sound-shifting, the loss of the *p* in Irish, or of the *σ* in Greek, &c.? If this is conceivable, then does it not follow that the imported word must soon have lost its foreign air under the action of the native phonetic laws?

These questions make themselves felt very clearly in the case of Indo-Germanic peoples that were early and long exposed to the civilising influence of some other Indo-Germanic people, as in Europe the Italians to that of the Greeks, the Teutons to that of the Celts.

In Italy at the time of the Samnite war the important phonetic law by which *s* between two vowels was transformed into *r* had completed its work. Greek words, therefore, containing an intervocalic *s* which were taken into Latin after this time are not affected by this phonetic change (cf. *mūsa*, *plaustĕlus*, *carbasus*, &c.). Greek

words, however, which found their way into Latin before this period, and therefore submitted to rhotacism, may easily look as though they were native and not borrowed. Thus *tûs*, *tûr-is*, "incense": θύος, θύε(σ)ος as *vetus*, *veter-is*: Fέτος, Fέτε(σ)ος; and, consequently, we should have no means of testing whether *tûs* was a loan-word from the Greek if it were not for the correspondence of the other consonants (Lat. *t* = G. θ) in this case.

Not unfrequently, however, such tests are altogether wanting—*e.g.*, Lat. *mâlum*, G. μῆλον, Lat. *mórum*, G. μόρον, μῶρον, Lat. *cupa*, G. κύπη, &c., which accordingly are claimed by some as borrowed, and by others as primevally related. *Cf.* above, p. 129.

An important means for deciding the relation of Celto-Teutonic words to each other is afforded by the first Teutonic sound-shifting. Teutonic words which show it (A.S. *tûn* = Gallic *-dûnum*) may be primevally connected with the corresponding Celtic. Words which do not show it (O.H.G. *charro*, Ir. *carr*) are certainly borrowed. It is, however, by no means impossible that Gallic words were taken into Teutonic before the effects of the first sound-shifting began to make themselves felt, as is the case, as a matter of fact, with Goth. *reiks*, "king," which on account of its *i* is undoubtedly borrowed from the Celtic (Ir. *rig-*); Osthoff, *Perfektum*, p. 10. Other words, too, may belong to the same period of borrowing, though we cannot detect them.

Very frequently considerations drawn from the history of culture will decide in a given case whether we have to do with borrowing or primeval affinity: though often this path also fails to bring us to the desired end. Thus, really (*cf.* V. Henn, 216, 527), it is extremely probable that the Romans got their *rosa* through the Greeks; but the phonetic change by which a G. ῥόδον, ῥοδῆ (above, p. 121) becomes a Lat. *rosa* has as yet nothing to give it probability.

The reason of this phenomenon may occasionally be found in the fact that of two words not one but both may be borrowed from a third as yet unknown to us, as may be conjectured to be the case say with Lat. *asinus*: G. ὄνος, and with Goth. *silubr*: O.S. *sirebro*.

Again, the circumstance that in one language a word displays the most luxuriant fertility of forms and meanings, does not exclude the possibility that it may be borrowed from a word which in its own language stands in apparent isolation: for it often happens that loan-words have a richer life than words native to the language. This is the case, *e.g.*, with the far-spreading stock of Goth. *kaupôn*, which I regard after what I have shown in my *Handelsgeschichte und Warenkunde*, i. 89, as distinctly borrowed from Lat. *caupo*.

Indeed, the nearer we approach to the oldest periods of language, the more the ideas of borrowing and of primeval affinity tend to coalesce.

Let us suppose, as above, that the way in which the equivalent names for plough arose in the European languages was that, at a time when the peoples who now occupy Europe were still geo-

graphically united, the root *ar* established itself at some point of this linguistic area as the designation for plough, and thence gradually spread and spread through the neighbouring peoples; here we obviously have a process of borrowing which must have required a considerable time for its completion.

This possibility, however, that words which appear to have an original connection with each other, may have spread from tribe to tribe at a later period, sometimes has its importance for history. Thus, as yet, silver has not been traced in the lake-dwellings of the plain of the Po (*cf.* Helbig, *Die Italiker in der Poebene*, p. 21), whereas, according to the common view, this metal must have been known to the original Italians, as is indicated by the comparison of Osc. *aragetiud* = Lat. *argentum*. This might be interpreted as an argument against believing that these lake-dwellers were Italians, were it not for the possibility that centuries, perhaps, may have elapsed between the time when those dwellings were inhabited and the time when the knowledge of silver spread through the still closely connected dialects of Italy. At any rate, Greek words like θησαυρός (Osc. *thesâurom, thesavrei*, Lat. *thesaurus*), Περσεφόνη (Phlgn. *Persponas*, Lat. *Proserpina*), τέρρις (Osc. *tiurri*, Lat. *turris*; *cf.* O. Weise, *Die griech. Wörter in der lat. Sprache*, pp. 34, 195), spread through the tribes and dialects of Italy so early that they might seem to be originally connected.

We have now to make some general remarks on the employment of loan-words for the history of culture.

We have said above (*cf.* p. 73) that the occurrence of a loan-word in a language as a rule justifies the conclusion that the idea conveyed by it was, like the word, borrowed from abroad; and on the whole this is perfectly correct. Just as we see from our words tobacco, potato, champagne, &c., the source from which or the agency by which these important elements of civilisation have come to us, so too the loan-words: Irish *mâr*, O.H.G. *mâra, mâri*, N. Slav. *mir*, Ukraine-Russ.-Pol. *mur*, Lith. *mûrâs*, AB. *mur*, &c., borrowed from the Lat. *murus*, show who taught North Europe to build walls and stone structures. Again, the Lat. *mina* takes us back through the G. μνᾶ, not only to the Hebraic-Assyrian *maneh, mana*, the source of the Egyptian *mn*, but even to the pre-Semitic language of Babylon, the Sumerian *mana*, thus pointing the way by which in the dim and distant past the discovery of weights and measures travelled from nation to nation.

Nevertheless we must remember that the presence of a loan-word does not always imply that the idea also was borrowed, and that the borrowing of an idea does not always imply the presence of a loan-word. As regards the first point, when one nation exercises a strong civilising influence over another neighbouring nation, names are usually borrowed for things with which the borrowing nation had long been familiar. The wealth of the English vocabulary, as is well known, is partially due to the existence side by side of "classical" and "Teutonic" synonyms.

But we must keep an eye open for similar cases in the early

history of language. When one nation or civilisation is brought into close contact with another, it usually happens that certain terms for immoral persons or proceedings are borrowed by the less civilised people from the vocabulary of the other: the Phœnician-Hebraic *pilleges*h, "courtesan," penetrated into Greek (*παλλακίς*), and thence into Latin (*pelex*), the Greek *πορνικος* into the Armenian *pornik* (Lagarde, *Armen. Stud.*, p. 130), the Latin *meretrix* into the Irish *mertrech* (Windisch, *I. T.*, p. 687), and O. Eng. *miltestre*; the White Russian *kúrva* into the Lith. *kùrwa* (Brückner, *Die Slav. Fremdwörter*, p. 100). The Finns, indeed, have borrowed three names for *filles de joie* from their neighbours (*huora*: Swed. *hora*, *portto*: O. N. *portkona*, *kurva*: Slav. *kurvïa*). For all that, it seems to me that it would be as rash to infer from this fact that the peoples mentioned were previously unacquainted with illicit relations as it would be to maintain that the Germans were ignorant of concubines until they made the acquaintance of the French *maîtresse*.

Often the native word continues to flourish by the side of the foreign, as indeed is the case partially with the terms quoted above (*cf.* G. *πόρνη*: Lat. *scortum*, Lith. *kèkszė*, Teut. *hure*); frequently, however, the native word is driven out by the foreign, and then there is no possibility of ascertaining by the unaided assistance of philology whether the thing in question did or did not previously exist.

The possibility that a language may provide a name for a borrowed object out of its own resources is not unfrequently realised. Obviously different languages behave differently when confronted with the same task—that of furnishing designations for things borrowed from a foreign civilisation. The Finns when they appeared on the Baltic, swallowed, if we may be allowed the expression, the vocabulary of their more civilised neighbours whole: the Indo-Germanic languages of the north of Europe can point to entire dictionaries full of loans from the classical languages, Latin from Greek. But the Greeks even in their dependence on the East showed themselves individual and creative. Their language in its older stage does not contain a hundred loan-words from the Semitic (*cf.* A. Müller, above, p. 74); while they, it seems, much more commonly than other nations, framed native names for foreign objects. Such pure Greek expressions are *ὕαινα*, "hyena" (: *ὗς*), *ῥινοκέρως* (: *ῥίς* and *κέρας*), and many others, which then usually travelled through the rest of Europe in Greek garb. The reasons of this different demeanour of different languages, both in particular instances and as a general rule, are manifestly various. Differences in the intellectual capacity or in the stage of civilisation of the recipients, the sudden or gradual and permanent action of the donors, the consideration whether a new object was first seen abroad or imported, all these things may be factors to be reckoned with. In any case these questions, to which O. Weise was the first to direct his attention in his excellent *Wortentlehnung und Wortschöpfung* (*Zeitschrift für Völkerpsych. u. Sprachw.*, xiii. p. 223, *f.*), deserve thorough investigation.

CHAPTER VII.

CONCLUSIONS.

Science of language not in a position of itself to reconstruct the primitive Indo-Germanic age—Summary of considerations—Relation of Comparative Philology to History and Palæontology.

We have now reached a point at which we must put to ourselves the question whether Comparative Philology of itself is in a position really to afford a satisfactory account of the primitive Indo-European ages? I believe that, after all we have set forth, the answer can only be in the negative.

Let us briefly recapitulate the difficulties which stand in the way of drawing inferences as to the history of culture from Comparative Philology. The first and most serious is caused by the gaps in the linguistic record of the Indo-Germanic vocabulary. We have no means of deciding whether an equation which is confined to a single set of languages is due to a close connection between those languages, or whether the others originally also partook in it. Consequently we are not in a position to observe the unity of time in our account of the primitive culture of the Indo-Europeans; for things or ideas, from which we imagine that we can infer the character of the primitive age, may have only become known at periods separated from each other by hundreds or perhaps thousands of years.

Again, our ignorance of the laws that determined the formation of words in the prehistoric period of language frequently leaves us uncertain whether a series of words identical in root and suffix do really derive from one and the same prototype, or whether their similarity is not the result of like forces working independently in different languages; while contrariwise in the case of equations based solely on the identity of the root there is always the possibility that the words did proceed from one and the same original form, and only lost their identity of structure when the languages were separated. If, again, an equation is such that we think that we may fairly infer from it the existence of a given word in the original language, then the question arises what was the primitive meaning of this word; and to this question it is that Comparative Philology, with especial frequency, finds itself unable to give a

satisfactory answer. Finally, we are frequently unable in important cases to settle the doubt whether an etymological equation is due to an original connection between the words or to borrowing in early times.

If we wish to convince ourselves by an actual example how extremely uncertain inferences about the culture of the Indo-Europeans usually are, when they rest on nothing but etymology, we have only to put by the side of each other the verdicts given by the most distinguished philologists, men like Pictet (*cf.* above, p. 82), Schleicher (*cf.* p. 22), Max Müller (*cf.* p. 25), L. Geiger (*cf. loc. cit.*, p. 121), Hehn (*cf.* p. 34), Benfey (*cf.* pp. 25, 40), and others, on the question whether Indo-Europeans were or were not acquainted with the metals. It will then be found that in this question only one thing is certain, viz., that of no single metal is it certain—*i.e.*, proved to the satisfaction of all or most authorities on the subject—that it was known in the primeval period. Each and every metal alike is both claimed for and denied to the primitive age, and that although the linguistic evidence is the same, and although we have here to do, not with mere dilettanti, but with passed masters in the science of language.

If we have protested against overrating linguistic palæontology, we are yet very far from underrating the importance of Comparative Philology for prehistoric research. However far back historical evidence or ambiguous myths and sagas may carry us in the history of a nation, every one knows how soon all clues forsake us. Even archæological palæontology only takes us a step further, and then only where it is possible, with some probability, to assign the monuments recovered by archæology to a definite people. Unfortunately this consummation as yet has been but rarely attained. The etymologist and the historian of culture find that the scene on which the boldest and most searching questions of palæontology are put, has no ethno-historical background, and no foundations in chronology. Who were those neighbours of the northern shores who in their "kitchen-middens" have left us traces of their existence; were they of the same flesh and blood as the modern inhabitants of those regions, or were they a foreign race? What was their relation to those ancient Europeans who rammed their piles in the lakes of Switzerland, and built their bare huts upon them? To judge by the fauna, the age in which the kitchen-midden men of Denmark lived, must on the whole have been about the same as that in which the lake-dwellers of Switzerland lived in Europe; yet, between these two ancient populations there is this great gulf: that whereas in the south the domestication of animals was far advanced, in the north the only companion of man that has as yet been traced is the dog.

So, then, between the furthest point to which history can trace the separate peoples, and the time when they were still united with other peoples, perhaps with the whole Indo-Germanic family, there is in truth a great gulf fixed which Comparative Philology alone can bridge, and that only at certain points. But we must always bear

in mind that at the very most language can only give us a skeleton, and that to cover the dry bones with flesh and blood is the prerogative of the Comparative History of culture. That the Indo-Europeans did possess the notion of a house the philologists shows us, for the Sans. *dámā*, Lat. *domus*, G. δόμος, Slav. *domŭ*, correspond; but how these houses were constituted the historian of primitive culture alone can ascertain. To state once more the quintessence of our argument, two sentences will suffice: Comparative Philology of itself is not in a position to reconstruct the primitive culture of the Indo-Europeans, and if we are to secure our advance step by step over this difficult ground, we can only do so on the condition that the three sisters, Linguistic Research, Prehistoric Research, and History, unite in the common work.*

* *Cf.* further, Part iv. ch. i.

PART III.

THE FIRST APPEARANCE OF METALS, ESPECIALLY AMONGST THE INDO-GERMANIC PEOPLES.

Quod superest, æs atque aurum ferrique repertum est
Et simul argenti pondus plumbique potestas.

CHAPTER I.

INTRODUCTION.

If the course of the evolution of human culture may not unfittingly be compared to a mighty river having many sources, some undiscovered, which is rolling onwards to the ocean of the future, those places on this stream have a special interest for the historian of culture, where a broad tributary joins the main stream to swell its flowing tide.

Amongst the great turning points in the history of culture may with good reason be reckoned the epoch when man makes his first acquaintance with the metals. For, the secret treasures of the earth, when once they are brought to light, affect the life and labour of man in such manifold ways, that under their influence a new birth, another age seems gradually to be called into existence. So, according to the views of the ancient natural philosophers, a circumstance beyond the common was needed in order to bring the metal bowels of the earth to the light of day. According to Lucretius, *De Rerum Natura*, v. 1250, *f.*, a mighty conflagration once consumed woods that stood on metalliferous soil :—

> "Quidquid id est, quaquomque ex causa flammens ardor
> Horribili sonitu silvas exederat altis
> Ab radicibus, et terram percoxerat igni ;
> Manabat venis ferventibus, in loca terræ
> Concava conveniens, argenti rivus et auri,
> Æris item et plumbi."

According to Poseidonius, in Strabo, c. 147, Spain's wealth in

gold and silver was betrayed in the same way.* In the Finnic saga (Kalevala, ix.) the iron which dropped to the earth from the full breasts of the three maidens fashioned by Ukko, fled before its raging brother, the Fire, and sought refuge

> In the swamps that make them stagger,
> On the broad back of the swamps,
> In the fountains full of water
> On the mountain's sloping sides,

until it was discovered by the "eternal smith," Ilmarine, and haled into the smithy, and so on.

Let us here try to realise the most important departments of human culture revolutionised by the metals. It was in truth a stiff bit of work that awaited man ere he could clear a space for himself and his belongings on the soil of our European home. Dense primeval forests, the beginning or end of which none of the settlers could boast he had ever reached, covered the interior. German names of places, in which no idea recurs in such manifold variety as that of "forest" and "bush," are a faithful mirror of the superabundance of forest in bygone times. Through the primeval forest the streams brawled unfettered, now concentrating in furious rapidity, now loitering in broad morasses. *Aut silvis horrida aut paludibus foeda* is the description of ancient Germany from the Roman's pen. Even the shores of the Mediterranean in this primeval period were not embraced by the ever green girdle, which at the present day gives the south its peculiar stamp. The useful olive, the fiery vine, the glorious laurel, the propitious myrtle—none of them as yet had left their southern home in Syria or their northern abode on the Pontus. Classic soil was still covered by sober forests of oak and gloomy firs, and the only harbinger of brighter times was "the soft breath that blows from the azure sky."

The animal kingdom, like that of the plants, is wilder and more terrifying. Gone long ago indeed are the old, giant inhabitants of Europe—the mammoth and the rhinoceros. The reindeer, too, has early retired to the north; but the aurochs, the bison, and the elk still continue to rove, at least as far as the valleys of the Alps. Boars, wolves, and bears are to be found in plenty; indeed, between the Carpathians and the Balkan, the lion must have made his dangerous incursions. Slowly man, and with him civilisation, makes his way from the sea-board, by the arteries of the rivers, into the interior. But how differently is the hard struggle for existence waged with the bronze or iron axe and with the unaided implement of stone. The forest is cleared quicker for man and his settlements, the well-carpentered dwelling-house rises with more majesty, the iron mattock digs deeper, when it is necessary to confide the corn with its promise to the nourishment of the earth.

However, as the bronze-tipped arrow brings down the chase

* Οὐ γαρ ἀπιστεῖν τῷ μύθῳ φησὶν ὅτι τῶν δρυμῶν ποτε ἐμπρησθέντων ἡ γῆ τακεῖσα, ὥστε ἀργυρῖτις καὶ χρυσῖτις, εἰς τὴν ἐπιφάνειαν ἐξέζεσε διὰ τὸ πᾶν ὄρος καὶ πάντα βουνὸν ὕλην εἶναι νομίσματος ὑπό τινος ἀφθόνου τύχης σεσωρευμένην.

more unerringly, so the iron sword deals a better blow to the enemy, and the old poets not unjustifiably regard war as a birth of the Iron Age, though others approaching more nearly to actual fact deny the bloody fray to no epoch :—

> "Arma antiqua manus ungues dentesque fuerunt,
> Et lapides et item silvarum fragmina rami."
> (Lucretius, v. 1282.)

> "Unguibus et pugnis, dein fustibus, atque ita porro
> Pugnabant armis, quæ post fabricaverat usus."
> (Horace, *Sat.*, i. 3.)

Iron fights out the quarrels of which the *auri sacra fames* (Virgil) is the cause :—

> "Effodiuntur opes, irritamenta malorum.
> Jamque nocens ferrum ferroque nocentius aurum
> Prodierat : prodit bellum, quod pugnat utroque."
> (Ovid, *Met.*, i. 140.)

The implements of the Stone Age are simple, and made only to satisfy the most elementary needs, though even here man's innate tendency to strive after the beautiful makes itself felt. With the art of working the metals the taste for ornament and decoration awakes. Besides axes, arrows, and knives, are now found also swords, lances, sickles, earrings, amulets, needles, rings, and so on. The ornamentation on these objects becomes bolder and more complicated; attempts are made at representing animals and plants (*cf.* J. Lubbock, *Prehistoric Times*, p. 14). All these objects of art, however, postulate a developed and practised skill, and if hitherto each and every man was in a position to make with his own hands all that was needed for house and home, even the simple earthenware and the unpretentious weaving of his clothes—for both are primeval arts—now there are rumours everywhere of the greater skill of some one man in smithying and preparing ore. The need of division of labour comes to be more clearly appreciated. Metallurgy is the first pillar to be erected in the growing fabric of industry.

But nature has distributed her costly metal treasures unevenly over the earth, and the inhabitants of the poorer districts hear with astonishment and envy of the inexhaustible and fabulous wealth of more favoured spots. Thus, tin, which is indispensable for the manufacture of bronze, appears to have been obtained in antiquity from only three localities, all fairly distant from the centres of civilisation: in Western Iberia, in the Cassiterides, named after the metal, and the northern borders of Persia, the modern Khorassan (*cf.* K. Müllenhoff, *Deutsche Altertumskunde*, p. 99, and K. E. v. Baer, *Von wo das Zinn zu den ganz alten Bronzen gekommen sein mag?* (*Archiv für Anthropologie*, ix. p. 263, *f.*). Nevertheless, bronze-work is distributed in the remotest antiquity from the banks of the Nile to Nineveh and Babylon. Inventive man, therefore, has learnt to fetch from distant countries the gifts which his native land refuses him, and though greed may sit at the helm, as

the frail bark cleaves the waves of the unknown and terrible sea, from the lower passions rises the genius of progress, the beginning of geography, navigation, trade, and commerce:—

"Yours, ye gods, is the merchant. And if his object in questing
Be but goods, there comes good in the track of his bark."
(Schiller.)

In the time of King Solomon, Phœnician fleets sail to Ophir, the land of gold, to Tarshish, in the south of Spain, for silver. A Carthaginian fleet under Himilco, whilst voyaging to the Tin Islands, discovers the European coast as far as England. In the Odyssey the Taphian Mentes (Athene) says:—

τὸν δ' ὧδε ξεῖνος νηῒ κατήλυθεν ἠδ' ἑτάροισι
πλεόων ἐπὶ οἴνοπα πόντον ἐπ' ἀλλοθρόους ἀνθρώπους
ἐς Τεμέσην μετὰ χαλκόν, ἄγω δ' αἴθωνα σίδηρον.

But the metals, on their travels as precious merchandise from sea to sea and from coast to coast, come to perform another function of immeasurable importance: as a medium of exchange they facilitate commerce between individuals and also between nations.* The primitive standard of value and object of barter amongst pastoral and agricultural peoples is the most precious of their belongings, their herds, especially cattle, cows. The Latin *pecunia* and *peculium*, as is well known, are but derivatives from *pecus*, "cattle;" in Gothic *faihu*, and in Anglo-Saxon *feoh*, mean "gold and cattle," &c. In Homer, also, cattle are the usual medium of exchange; but he is also acquainted with the use of the metals, gold as well as iron and bronze, for this purpose:—

ἔνθεν ἄρ' οἰνίζοντο καρηκομόωντες Ἀχαιοί·
ἄλλοι μὲν χαλκῷ, ἄλλοι δ' αἴθωνι σιδήρῳ,
ἄλλοι δὲ ῥινοῖς, ἄλλοι δ' αὐτῇσι βόεσσιν,
ἄλλοι δ' ἀνδραπόδεσσι.

(Il., vii. 473, *f.*)

Nowhere, however, can the transition from the old simple mode of exchange to the use of a currency be better traced than among the Romans. Here the oldest legal fines are fixed in sheep and cattle; gradually, however, the custom grows up of using another measure of value as well as cattle, that is, copper (*æs*). It is unshaped (*æs rude*), and is weighed when sold, until eventually the state puts an end to the arbitrary shape and fineness of the metal, fixes a definite form for the copper bars, and stamps the new cast metal with a mark (*æs signatum*), which characteristically enough usually represents a cow, sheep, or pig. It is not until much later that (*circ.* 451 B.C.) copper is provided with a mark indicating its value, is made independent of the scales, and that thus a currency is attained (*cf.* F. Hultsch, *Griechische u. Römische Metrologie*, p. 188, *f.*).

* On the following, see for further particulars the author's *Handelsgeschichte und Warenkunde*, i. 111–41.

The influence, thus briefly sketched, exercised by the metals on the course of human development is, however, we must not forget, not complete until all conditions, external and internal, are present for enabling it to act as lever to an advance in culture; and it not unfrequently occurs that tribes, even when they have made their acquaintance with the metals, fail to get beyond a very primitive stage in their working and utilisation. Thus the North American Indians of Lake Superior were presented by nature with pure copper in such quantities that it could scarcely escape the observation of these savages. The first Europeans, accordingly, found that it was employed by them for making axes, armlets, &c., though they were manufactured simply by hammering the native ore (*cf.* R. Andree, *Die Metalle bei den Naturvölkern*, p. 220). The Hottentots understood even how to melt iron ore in holes dug in the earth for the purpose, and to manufacture iron weapons, though it is not impossible that this art may have spread from the north-east coast into the interior of Africa,[1] as the *Periplus maris Erythraei* (§ 6) speaks of an extensive trade in metals and metal objects being done from the south-west coast of the Arabian Sea. Nevertheless, in other respects these tribes have not advanced in the least beyond the lowest stage of savagery. But, save by these and other tribes remote from the stream of human development, the summons that rose from the bowels of the earth was not suffered to go by unheeded.

Whether and how far the Indo-Europeans before their dispersion shared in the blessings bestowed by metals and metallurgy, as we have described them, or, if not, from what points of departure and in what directions a knowledge of the metals spread amongst the Indo-Europeans—these are the questions which are to form the substance of the following investigation, which certainly will often enough be compelled to travel beyond the borders of the Indo-Germanic peoples.

[1] In any case iron must have been known first in Southern Africa. The Bacahapin, a Kaûr tribe, take iron (*tsipi*) as the starting-point for all their names of metals: Thus gold is *tsipi e tscha*, "yellow iron;" silver, *tsipi e shat*, "white iron;" copper, *tsipi e kubila*, "red iron." *Cf.* Rougemont, *Die Bronzezeit oder die Semiten im Occident*, p. 14.

CHAPTER II.

THE NAMES OF THE METALS IN GENERAL.

It is a remarkable phenomenon that the metals known and worked by any people form an exclusive group in the linguistic consciousness of that people. This is not due to the early existence of a collective name for the metal treasures of the earth. On the contrary, as is the case with nearly all generic names, it is not until a late period that such a collective name begins to establish itself. If in early times an expression is needed for the metals collectively, the *pars pro toto* is used, that is, the name of the metal, which ever it is, which happens to be the most important, is used as the name of the genus. In this sense are used Sans. *ayas* (*ays*), Zend *ayanh* and *ayôkhshusta*, "liquid metal" (Parsi *ayôkhsasta*, N. Pers. *ayôkshust*), G. χαλκός, H.G. *erz*, Slav.-Lith. *rudŭ*, and others, whose real and original meaning will have to be further discussed.

On the other hand, the Greek and Latin, μέταλλον, *metallum*, from which come on the one hand Mod.G. μέτάλλον and Armen. *metał*, and on the other Irish *mitall* (Stokes, *Irish Glosses*, p. 96), and the Romance words, Fr. *métal*, &c. (cf. Diez, *Etym. W.*[5], p. 208), in the sense of a generic name for metals, is comparatively recent. In Herodotus where the word occurs for the first time, μέταλλον means nothing but the mine, the workings, and it is only in later literature that it comes to mean metal. The obviously borrowed Lat. *metallum* (O. Weise, *Die griech. Wörter im Lat.*, pp. 155, 458) also still means mine as well as metal. The attempts to find an Indo-Germanic explanation for the G. μέταλλον (Curtius' *Grundz.*[5], p. 55; *B. B.*, i. 335) are not successful. A derivation from the Semitic (Renan, *Histoire der langues sémit.*, i.[4], 206) has been attempted also, G. μέταλλον = Hebr. *mâtal*, "to smithy," *m(ê)tâl*, being placed side by side. Improbable, as at first sight it seems, that a word for "mine" should be developed out of a verb meaning "to smithy," it may be that we can put the matter on its right footing if we assume that the Phenicians, who certainly opened up mining in Greece, at the same time that they dug mines also erected smelting-houses and smithies in order at once to have the ore they obtained in a form convenient and ready both for export

and for trade with the natives. That such Phenician smelting-houses and smithies really did exist on Greek territory is shown clearly by the names of various Greek places.

The inner connection of the Indo-Germanic names of metals is attested by the easily recognised rule that the names given by any language to the metals are united by identity of gender; in Sanskrit, Zend, Slavonic, Latin, and Teutonic the gender is the neuter, which is what one "might have expected to designate essentially dead and motionless matter." (J. Grimm, *Deutsche Grammatik*, iii. p. 378); in Greek and Lithuanian masculine—the feminine as a rule is not employed. But the remark may be made that in the languages of North Europe, the further east you go the more exceptions there are to the original rule. In Teutonic *stahal* (Graff, vi. p. 827) varies between masculine and neuter, *smîda* ("metal") is feminine; in Lithuanian *rūdà* ("metal, ore") and *geležis* ("iron") are feminine: in Slavonic *ruda*, *mědi* ("copper"), *ocelí* ("steel") are feminine, *kossterá* ("tin") masculine. The historical explanation of these facts will engage our attention later.

The cohesion of the metals, however, comes out still more plainly in the remarkable fact that in the oldest monuments of the civilised peoples of Europe and Asia the metals occur in a fixed and, on the whole, in the same order, in which the four guiding points are gold, silver, copper, iron. This is found in the inscriptions of ancient Egypt, in the cuneiform inscriptions of Assyria, in the Bible, and in the Vedas; while in the region of ancient Greece the Four Ages of Hesiod, which the poet names after the four metals just mentioned, can only be regarded as a mythological and imaginary enumeration of stages of culture in an order commonly current amongst the contemporaries of the poet.* We also shall adopt this order, since real historical data for arranging the metals in the order in which they became known will only be forthcoming in the course of our investigation. Before, however, turning to the individual metals we shall do well to examine somewhat closely the handiwork of the worker whose craft first gives the metals their greatest importance for man—the Master Smith.

* This fixed order of the metals led, apparently at an early period and in a manner not yet wholly explained, to the parallel between it and the order of the seven planets so important in the religious views of ancient peoples, and caused them both to be assigned, after many fluctuations, to certain deities. Then from this there gradually grew up the alchemists' signs for the metals, which were finally fixed about the thirteenth century:—

Gold.	Silver.	Quicksilver.	Copper.	Iron.	Tin.	Lead.
☉	☽	☿	♀	♂	♃	♄
Sol.	Luna.	Mercurius.	Venus.	Mars.	Jupiter.	Saturn.

Cf. J. Beckmann, *Chemische Bezeichnung der Metalle* in the *Beitr. z. Gesch. d. Erfindungen*, 1792, iii. p. 356, *f.*, and Kopp, *Geschichte der Chemie*, ii. p. 421 *f.*

CHAPTER III.

THE SMITH IN LORE AND LANGUAGE.

ROUND no calling of man has story woven brighter threads than round the craft of the Master Smith, which is referred in the mythology and folklore of most peoples to times of the hoariest antiquity. As in the Bible (Gen. i. 4, 22), Tubal Cain, the master in all kinds of bronze and iron work, was born long before the flood; so in the Rigveda, Tvashṭā forges the thunderbolt for the fierce Indra. As the genius of metals the Zend Avesta knows one of the *Aṇḗsha spenta Kshathra vairya*. The Greek Olympus is provided with metal works of art by the artificer Hephaestus, the Latin by Vulcan; even in the venerable *Carmen Saliare* the name of a smith, Mamurius, found mention; and in the Valuspa, song of the Edda it is said in Str. 7:—"The Asas built them house and shrine in the field of Ida to arch them high over. They built forges and smithied ore, welded tongs and lovely ornaments." If, however, according to the ideas of the Indo-Germanic world of story, the art of the smith mounts to the highest antiquity, a question of the greatest importance for the whole of our investigation is at once raised—*i.e.*, whether the Indo-Europeans before their dispersion were acquainted with the craft of the smith or not? For, if we are in a position to answer the question in the affirmative, the acquaintance of the Indo-Europeans with certain metals would be a necessary consequence.

If we begin by examining the names given to the smith by the Indo-Germanic peoples, we find first that they show no etymological connection with each other. An exception to this rule is afforded only by O.S. *vidri*, "smith" = O. Prūss. *wutris* (*autre*, "smithy"), on the one hand, and on the other by Teut. *smiđar* = O.S. *mēdart*; in the latter words, however, we may have a case of independent derivation from *smiđa*, "metal," and *mēdi*, "copper," the relation of which we shall have to consider hereafter. On the other hand, nearly all peoples have genuine native names for the smith which usually extend over all the dialects of a language, as in Teutonic O.H.G. *smid*, A.S. *smiđ*, O.N. *smiđr*, Goth. *smip*; in Celtic Ir. *goba*, Bret. Corn. Gymr. *gof*; in Italian Lat. *făber*, Picen. *fâber** (*forte*

* It is not impossible that the roots of the Celtic word and the Italian may be related.

faber; F. Bücheler, *Lex. It.*, p. ix.). The high antiquity of these words is also shown by their early use as proper names. Even in the Rigsmal, v. 24, we come across a *Smidr*; compare with this Lat. *Fabricius*, and the Old Gallic *Gobannitio* (*Cæs.*, *B. G.*, viii. 4), Ir. *Gobanus*, Cymr. *Gouannon*.

Loans from one Indo-Germanic language to another are occasionally to be found (*e.g.*, Lith. *rudininkas*, from Pol. *rudnik*, and Alban. *κοβάτσα*, O.S. *kovači*); from a non-Indo-Germanic language to an Indo-Germanic language very rarely (*e.g.*, Alban. *αλβάτι* from the Turkish). On the other hand, the Indo-Germanic word for smith often travels beyond the borders of this family of speech; thus the Germanic word found its way to the Lapps (*smirjo*, *smid*), the Slavonic *kovač* to the Magyars (*kovács*), the Lith. *kálvis*, Lett. *kalleys* to Livonia and Esthonia (*kalev*, *kalevi*). The last loan would date back to a very ancient period if the name of the national and eponymous hero of the Finns, *Kaleva*, who is also to be regarded as the father of the eternal smith Ilmarine, is rightly brought into this connection.*

The conclusion from all this is that names for the smith must have grown up amongst the Indo-Germanic peoples at a very early period, but not when they were still ethnologically united.

As regards the origin of the Indo-Germanic names for the smith, it is threefold. They are either derivatives from words designating metals or metal collectively, as G. *χαλκεύς*, *σιδηρεύς*; *χαλκός*, *σίδηρος*; O.H.G. *smidar*: *smida*, O.S. *mědarĭ*: *mědĭ*, and *kuznĭcĭ*: *kuznĭ*, "*res e metallo cuso factæ*," Pol. *rudnik*: *ruda*, &c. Formations such as N. Pers. *āhangar*, Kurd. *hasin-ger*, "preparing iron": *āhan*, "iron," belong here. From neighbouring languages may be compared Lapp. *ravdde* = Finn. *rautio*, "smith": *rauda*, "iron," and Turk. *temirži*, "iron man": *limir*, "iron," &c. Or, in the second place, the names of the smith come from verbals which designate smithying as originally hewing, such as Lith. *kálvis*, *kálti* = Lat. *cellere*, O.S. Russ., &c., *kovači*, *kovati*, *kuja* (*ku* = Lat. *cu-d-ere*, O.H.G. *houwan*, &c.). Third and last, substantives with the general meaning of worker, artificer, are specialised down to the narrower meaning of smith. Thus Sans. *kármārá* = *karmāra*, (rt. *kar*, "make"), Lat. *faber* (originally "artisan" in general), Ir. *cerd* (*ærarius*; *cf.* Windisch, *I. T.*, p. 420) by the side of *gobo* = Lat. *cerdo*, "artisan." This transition, however, can be most clearly traced in the Teutonic word, Goth. *smiþa*, O.N. *smiðr*, &c. In the older periods of the language it regularly has the meaning of the Latin *faber*, and consequently we find as well as O.H.G. *ērsmid*, *chaltsmid*, &c., also A.S. *vigsmiđ*, O.N. *ljóðasmiðr*, *bolvasmiðr*, "mischief smith," O.S. *vundersmiđ* (Beow., 1682), O.H.G. *urtailsmiđ*, &c. The case is precisely the same with the West Finnic names of the smith, *seppä*, which cannot have had this meaning originally. In popular language we come across Finn. *runbseppä*, "a master of

* So Ahlqvist, *Culturw.*, p. 58. Otherwise, O. Donner, *Vergleichendes Wörterb. der finnisch-ugrischen Spr.*, i. p. 57, who regards *Kaleva*, &c., as genuine.

runes,' *purvenseyo*, "experienced in building boats," Estlc. *kuu-seppa*, "shoemaker," *rätsepp*, "tailor," and others (*cf.* Ahlqvist, *Culturw.*, p. 57). Hence, even though certain equations such as Ir. *cerd* = Lat. *cerdo* are to be found in the names of the smith, it by no means follows that a word for "smith" existed in the primitive period.

A designation for the smith, which is not without its interest, at any rate for later times, is offered finally by the Alban. *jéßtri* = Αἰγύπτιος, Mod. G. Γύφτος, Eng. *gipsies*, Span. *Gitanos*, properly "*Zigeuner*." For the craft of brazier was practised principally by them (O.H.G. *maltsmid*, "he who smithies without fire") both in the East and in the West. The gipsy dialects themselves (*cf.* A. Pott, *Die Zigeuner in Europa und Asien*, i. p. 147) offer nothing of importance. On the gipsy smiths, *cf.* R. Andree, *loc. cit.* p. 79, *ff.*

Facts of language exactly analogous to those offered by the names of the smith are presented by the terms for his tools and implements. Thus, not a trace of affinity in the names for these things can be detected between Greek (μυγή, Hom. ἄκμων, bellows, Hom. ἡ σύρα, the smith's hammer, Hom. ἡ ῥαιστήρ and ἡ σφῦρα, the fire tongs, ἡ πυράγρη, later κάρφινοι, "crab claws," the melting-furnace, Hom. χοάνος : χέω, later κάμινος, θερμαστρα, βαῦνος), and the Italian words *cudo* formed from *cudere*, as *ambos* : O.H.G. *anapôz* : *pôan*, "*fundere*," and O.S. *nakovalo* : *kovati*, or Lith. *prëkâlas*, O. Pruss. *precalis* : *kalti*, *follis*, *malleus*, *forceps*, *fornax*, *furnax*).

In the oldest monuments of the Hindus and Iranians, also in spite of their close relationship, the only implement of metallurgy which admits of comparison, the melting-furnace, has totally different names. In the Rigveda the name is *dhmâtâ* (*dhmâtri*, "the melter") : *dhmâ*, *dhmâ*, "to blow," cf. *dhmâtâsa dṛtis*, "bellows," in the Avesta, however, *saêpa* (*aŋhaêpa*; *erezatôsa-pa*).[1]

Moreover, in the passage of the Avesta, Vend. viii. 254, *f.*, which is so important for ancient Persian metallurgy (*cf. K. Z.*, xxx. p. 578, *f.*), the melting-furnace is designated by a word which is evidently Semitic, Zend *tanûra*, Hebr. *tannûr*, and which also recurs in New Persian and Afghani. It would not be impossible that the promontory of the ferruginous soil of Laconia, Ταίναρον, situate in the immediate neighbourhood of the ancient Phenician settlements in Cythera, may derive its name from the same source, just as another Hebrew-Phenician term for the melting-hut (*zârîph hût* : *zârâf*, "to smelt") recurs in the name of the Greek island Seriphos (in Phenician *Sarepta*); also *cf.* Kiepert, *Lehrbuch der alten Geographie*, p. 252).

That the smith's tools originally were made of stone, is shown by

[1] A. Fick, *Vergl. Wörterbuch*, i.[4] classes here G. κίβδη, "slag," κίβδων, "mine" (*l*). W. Geiger, *Ostiran. Cultur*, p. 388, derives *saêpa* from a root *sip* (N. Pers. *sitan*, "to harden") and Zend *pista*, also "smithy," from Sans. *piś*, "to adorn." According to K. Geldner (*K. Z.*, xxv. p. 685), Zend *tanûra* and *aoni* were also smelting processes.

the frequency with which their names are derived from the old Indo-Germanic name for stone. To it belong in Teutonic O.N. *hamarr* = O.H.G. *hamar*; O.S. *kamy*, *kamenĭ*, "stone," in Greek ἄκμων, "anvil" = Sans. *áçman*, "stone," κάμινος, "oven"; O.S. *kamenĭ* (O.S. *kamina*, "oven," &c.; Magyar *kemény* come from Græco-Lat. κάμινος-*caminus*, Germ. *kamin*), in Sans. *áçman*, "hammer" and "anvil" (later), "oven." An attempt to refer all the words mentioned to a primitive graded paradigm is made by Bechtel, *Nachr. d. Ges. d. W. z. Göttingen*, 1888, p. 402.

Before the art of sewing hides (G. Hesych. θαλλίς, Lat. *follis*) so as to make bellows was understood, recourse was had to the wings of the larger birds, as we learn from the Rigveda, ix. 112·2, the oldest passage on Indo-Germanic ground which introduces us into a smithy *:—

> The smith with brushwood on the hearth,
> And in his hand a goose's wing,
> With anvil and a blazing fire,
> Awaits a wealthy customer.

In the West Finnic languages a good deal of borrowing has taken place from Teutonic and Lithu-Slavonic (*cf.* Ahlqvist, *Culturw.*, p. 60, *f.*). Thus, to quote but one instructive example, Finn. *paja*, Esth. *paja* and *pada*, "smithy," correspond to Teutonic *potta*, *pott*, *potte*, "vessel," Lith. *pudas*, and so called to mind the times when the smith, as the gipsies subsequently, travelled from place to place and was prepared to set up his workshop at any spot.† A contrast to these smiths, but one which equally points to the primitive beginnings of the craft, is afforded by the public smithies open to all in the Middle Ages in Germany, where every man did his own bit of work for himself. Homer also seems to be acquainted with them. At any rate in *Od.*, xviii. 328, the smithy (χαλκήιος δόμος) is placed on the same level with the λέσχη (Hebr. *tish(ĕ)kăh* ?).

Although, therefore, from what has been said, it appears that language by no means indicates that the most ancient Indo-Europeans were acquainted with the craft of the smith,‡ still there may be an inclination to infer it from the agreement of certain cyles of sagas, which seem to have formed round the smith and his trade at a very early period. We refer mainly to the striking affinity, insisted on by A. Kuhn (*K. Z.*, iv. p. 95, *f.*), which on the one hand is asserted between the classical stories of Hephæstus and Dædalus, and the Teutonic-Norse Völundr and Wielant stories, and which on the other hand has to be verified.

* *Cf.* Geldner u. Kaegi, 70, *Lieder d. Rigveda*, p. 167.

† *Cf.* also O.H.G. *ovan*, G. ἰπνός, "oven," Sans. *ukhā*, "pot" (?).

‡ I cannot see that the undoubtedly correct equation, Sans. *carú*, "kettle, pot," O.N. *hverr*, Ir. *coir*, constitutes a real objection to this. *Cf.* E. H. Meyer, *Indog. Mythen*, ii. 681. Why may not this "primitive," "sacred" vessel have been originally made of clay? On such inferences, *cf.* above, p. 140.

To begin with we are struck by one feature which Völundr, the smith of the north, has in common with Hephæstus, the smith of the south. As the former has his tendons cut by King Niđuđr, in order that he may remain in Sâwarstadr, and thus is lamed, so Hephæstus receives from Homer the epithets κυλλοποδίων, "wry foot," and ἀμφιγυήεις, "limping on both legs," and appears therefore to have suffered some infirmity of the feet, with which according to some he came into the world, but which according to others was the result of his fall from Olympus. It seems also to be noteworthy that Völundr in his captivity offers violence to Bödvildr, the king's daughter, just as Hephæstus does to Athene, when she wishes him to make her some weapons.

Still more palpable are the traits of affinity between the story of Wieland and Dædalus. As Völundr is forcibly detained in Sâwarstadr by King Niđuđr, so is Dædalus by Minos. The valley of wolves in which the former dwells, fashioning works of the smith's art, makes a tolerable parallel to the labyrinth in which Dædalus devises his works of art. As Völundr soars into the air on the wings which he has invented, so Dædalus escapes in the same way. In the north it is Egill, the brother of Völundr, who makes a fatal essay with the wings and falls to earth through his brother's treachery; in the south it is Icarus, the son of Dædalus, who falls with his wings into the sea, though certainly through his own carelessness.

In spite of the undeniable resemblance of these representations, we must entertain a well-founded hesitation to allow straightway that they are of Indo-Germanic origin.

To begin with, the figure of Hephæstus cannot possibly be identified with that of Dædalus; for though the former is called δαίδαλος by Pindar, the meaning of the word (δαιδάλλω, "to fashion with art,") is so general that it is quite out of the question to identify the two mythological figures on the strength of it. On the contrary, nowhere in all classical antiquity has Dædalus, the hero of wood-carving and architecture, anything to do with metallurgy (*cf.* L. Preller, *Griech. Mythol.*, i. p. 123), and the connection, probably very ancient, of his name with the Phoiniko-Semitic Crete hints not obscurely at the oriental origin of the stories associated with him.

On the other hand, as regards Hephæstus, whose name unfortunately has not yet been interpreted,* it is impossible to doubt that by it the simple nature-power was still designated in prehistoric

* Max Müller identifies Ἥφαιστος with Sans. *yávishṭa*, "the youngest," a perpetual epithet of Agni; A. Kuhn with *sabhégishṭa*, "most connected with the house" (*cf.* Vesta, ἑστία), *K. Z.*, xviii. p. 212; Bezzenberger in his *Beiträge*, iii. 155, takes Ἥ-φαιστος as = *σϝά-φαιστος, "having his own light;" Fick, *B. B.*, iii. 167, acquiesces, and sees in φαιστος the name of the Cretan town Φαιστός, where Γελχάνος (see next note) was worshipped. The gods' poor smith comes off worst at the hands of L. v. Schröder, *Griech. Götter und Heroen*, i. 81, who makes Ἥφαιστος = a Sans. **yâbhayishṭa* "*fututionis valde cupidus*," and tries to show the god to be a lecherous, Gandharva sort of creature.

Greek times, and, like the Agni of the Veda, was worshipped as divine. Thus, in ii. 426, the poet can still say in this sense:—

σπλάγχνα δ' ἄρ' ἀμπείραντες ὑπείρεχον Ἡφαίστοιο;

and the Italian *Volcanus* also contains clearly the idea of the brilliance of fire, if it is rightly derived from Sans. *varc*, "to be brilliant," *várcas*, "brilliance" (according to Grassmann, *K. Z.*, xiv. p. 164).*

Since, further, according to Cæsar (*de B. G.*, vi. 21), the Teutons adhered even in his time to the worship of fire, purely as a nature-power (*deorum numero eos solos ducunt quos cernunt et quorum apertis opibus iuvantur, Solem et Vulcanum et Lunam*), one might indeed assume that under the personality of Wieland-Hephæstus there lay some mystical fire-demon, possibly conceived of, in accordance with the nature of the element, as a knavish being. Indeed, it might seem as though the lame Hephæstus of the Greeks was parallelled by the Teuton Wieland, maimed of leg, in the epithet *apâd*, "footless," which, as well as *açirshâ*, "headless," is given to Agni in the *Rigveda*, though certainly only once (iv. i. 11); and that here we have the primitive view of the unsteady, flickering movement of fire giving expression to itself.

All this, indeed, is more than uncertain: what does seem to me certain is that the palpable agreements between the stories of Wieland and Dædalus point not to some primeval substructure of myth, but much rather to direct borrowing by the Teutons from classic ground, even though for the moment we are unable to give irrefutable demonstration of the time and place of the spread of the story. In a paper which has recently appeared in *Germania* xxxiii. 449 *ff.*, *Die Wielandsage und die Wanderung der fränkischen Heldensage*, W. Golther has endeavoured to show that the Teutonic Wieland story is nothing but a conscious, poetic combination of the ancient stories of Vulcan and Dædalus, put together not before the sixth century, on Frankish soil, whence it spread to the other Teutonic tribes. We will not say that we feel convinced in all respects by his argument; but it must be allowed that in the present condition of Comparative Mythology (*cf.* further, part iv. ch. xiii.) it would be premature to draw inferences as to the culture of primitive Indo-Germanic times from analogies drawn from a cycle of stories so seriously exposed to the suspicion of being borrowed at a late age.†

* Nevertheless *Volcanus* is probably not an Italian word at all. The Hesychian Γελχάνος· ὁ Ζεὺς παρὰ Κρησίν, which is also guaranteed by an inscription (on a coin), suggests itself; *cf.* Voretzsch, *Dial. Cret.*, p. 6. On Etrurian monuments also *Velchanu* occurs, which, however, is interpreted as a proper name by Corssen, *Die Sprache der Etrusker*, i. p. 969.

The genuine Etruscan Vulcan is rather *Sethlans*. He it is who with a blow of his hammer delivers Jupiter of Minerva; *cf.* H. Blümner, *De Vulcani in veteribus artium monumentis figura*; Diss. Vratislaviæ, 1870. *Cf.* further, Pauli at the *Philologenvers.* at Stettin, 1880.

† The mythical character of the Wieland story is stoutly maintained by Niedner, *Zeitschrift f. D. A.*, xxxiii. 24–26; L. v. Schröder, *Griechische Götter und Heroen*, i. (1887). *Cf.* also E. H. Meyer, *Anzeiger*, xiii. (1887) 23, and *Indogermanische Mythen*, ii. (1887) 679.

We, therefore, devote the rest of this chapter to a compressed account of the most striking traits of affinity which almost everywhere in Europe cluster round the craft of the smith, without further entering on any discussion of the reasons of this connection.

In the first place the view is widespread that smithying was first discovered, and continued to be practised, by supernatural beings. In the Teutonic north these are on the one hand the giants, whose weapons are bars of iron, and in whose land is the forest of iron. Names also, such as *Járnsaxa* and *Járnglumra* (*járn*, "iron") are found amongst them (cf. K. Weinhold, *Altn. Leben*, p. 93). On the other hand, however, and more especially they were dwarfs (O.H.G. *twerc*, A.S. *dweorg*, O.N. *dvergr*), whose other common Teutonic name (O.H.G. *alp*, "elf," A.S. *ælf*, O.N. *álfr*) A. Kuhn (*K. Z.*, iv. p. 110) compares with the name of the Hindū *ṛbhú*, and interprets as the spirits of the deceased (*pitáras*, *πατέρες*), and who were regarded throughout the whole area of the Teutonic languages as the guardians and workers of the treasures below the earth. According to the Wilkina saga, Wieland was first taken by his father Wade to Mimir to be taught, but when he, like his comrades, was ill-treated by Siegfried, to two dwarfs in the Kallevaberge. In the Vǫlundarkvíða also, Vǫlundr was called *álfa lióði*, "*alforum socius*," and *visi álfa*, "alforum princeps."* Dwarf smiths occur in the stories in A. Kuhn, *Sagen, Gebräuche, und Märchen aus Westfalen*, i. Nos. 52, 53, 152, 288, &c.

* Owing to the fact that in the prose introduction to the Vǫlundarkvíða, Vǫlundr is spoken of as the son of a king of Finland, M. Sjoestan, in an interesting essay, *De Finnis alisque Tschudicis gentibus scientiæ et artis metallorum antiquitus insignibus* (cf. *Bulletin scientifique publié par l'académie imp. de Saint-Pétersbourg*, vi. p. 165, *f.*), is led to see a Finnic population in the Norse Alfas. C. Hoffman (*Germ.*, viii. p. 11) would even explain the O.N. Vǫlundr by the Finnic *valaa*, "to melt." Derivations of this kind, however, are inconsistent with the want of independence shown by the West Finnic peoples in the terminology of the smith's art, to which we have already casually alluded. In the course of time certainly the Finns did become famous smiths, as a glance at the Kalevala or the Kalevipoeg (an Esthonian saga, translated into German by Carl Reinthal, *Verhandlungen der gel. ehst. Gesellschaft zu Dorpat*, iv. and v.) is enough to show, so that the relatively late author of the prose introduction to the Eddas might easily be led to regard the Teutonic Vǫlundr as a Finn. Cf. also Förstemann, *Geschichte d. d. Sprachstammes*, i. p. 454.

Naturally, attempts have been made at derivations from Celtic, on which see H. Schreiber, *Taschenbuch für Geschichte und Alterthum in Süddeutschland*, iv. p. 103, *f.* W. Golther in the paper mentioned above quite rightly separates the two series of names *Waland* (*Galand*)—O.N. *Vǫlundr* and A.S. *Wēland*—O.H.G. *Wielant*; they cannot be reconciled phonetically. He sees in both ancient Teutonic proper names which the Frankish poet employed to represent the classical names Dædalus (*Wēland*) and Vulcan (*Waland*): it was the etymology of *Wēland* (O.N. *vél*, "*ars*," *τέχνη*, confined indeed to this language) which suggested it to the poet, while he chose *Waland* (cf. *Wado* for Vulcan because of the various mediæval attempts to interpret *Vulcanus*, *Volicanus*—the god being regarded as *per ærem volans*.

This last explanation will be deemed very far-fetched. If W. Golther is right in his hypothesis of the Frankish origin of the Wieland story, the idea suggests itself of combining with it a conjecture made by O. Keller (*Allg. Zeitung*, 1882, No. 140, Beilage), who sees in Wieland, for which we need only substitute *Waland-Vǫlundr*, a corruption of the name of the Emperor

What correspond in the south to the giants of the north are the cyclopes, who in Homer certainly are not associated with smithying, and of whom it is only a later story that states that in Sicily and other volcanic localities they prepare ore for gods and men, as the comrades of Hephæstus groaning in fire. But classical ground does not seem to have been without its representation of the smith as a dwarf. Plastic art appears to have represented Hephæstus in older times as a dwarf-like figure (*cf.* Preller, *Griech. Mythol.*, i. p. 125). At any rate, the representation of Hephæstus in the temple of Memphis, on which Cambyses wreaked his rage, resembled a dwarf or a kobold. *Cf.* Hdt., iii. 37: ἔστι γὰρ τοῦ Ἡφαίστου τύγαλμα τοῖς Φοινικήϊοισι Παταίκοισι ἐμφερέστατον, τοὺς δὲ Φοίνικες ἐν τῇσι πρῴρῃσι τῶν τριηρέων περιαγουσι . . . . πυγμαίου ἀνδρὸς μίμησίς ἐστι. Subsequently, the dwarfish figure of Hephæstus seems to have been transferred to his assistants. Thus, a bas-relief in the collection of the Louvre introduces us into the workshop of Hephæstus, where the master with some Satyrs is hard at work. But near the furnace, from which the flame blazes out, sits a dwarfish, bearded, hump-backed figure, which is bent down and is examining with the air of a connoisseur the polish on a helmet in front of him (*cf.* E. Guhl u. W. Koner, *Das Leben der Griechen u. Römer*, p. 28).

Finally, it seems to me most probable that the most familiar of the enigmatical, Græco-Asia-Minor demons, connected with metallurgy, such as the Cabiri, Telchines,* Corybantes, &c., the Ἰδαῖοι Δάκτυλοι, to whom we shall return hereafter, belong to this cycle of ideas, as their names (fingerstalls, hop o' my thumbs, pigmies) indicate. In no case, however, will the venturesome explanations of this word δάκτυλοι given by the ancients (*cf.* Pollux, ii. 156) be allowed.

As the amazement of man at the marvellous art of melting the hard metal in the fire and fashioning things of price out of it caused its invention to be ascribed to supernatural beings, so its exercise by mortal beings could not be conceived without the assistance of mysterious and magical means. This view, again, prevails throughout all Europe. The Ἰδαῖοι Δάκτυλοι already mentioned, even in the oldest notice of them that has been preserved, in the epic fragment of Phoronis (*cf.* Schol. to Apoll. A., i.

Valentianus I. "He, the contemporary and patron of the poet Ausonius, was well known to the Germans as the conqueror of the Alemanni, Franks, and other Teutonic tribes . . . . . he frequently resided for a year at a time at Trier. His outspoken affection for the plastic arts was remarkable; he tried painting with some success, modelled figures in clay and wax, actually discovered new kinds of weapons, and practised mechanics and architecture, especially military architecture, with extraordinary affection and undeniable skill."

* An attempt has recently been made in a very attractive way by W. Prellwitz, *B. B.*, xv. 148, to explain the Τελχῖνες as spirits of the smithy: he compares *G.* χαλκός = Lith. *gelezis*, O.S. *želězo* (rt. *ghel-gh* = *G.* θελχ, τελ-χ). The form Θελχῖνες is then a folk-etymology from θέλγω, "enchant" (*cf.* below).

1126), are called γόητες, "sorcerers," a perpetual epithet, which frequently recurs in later literature.* In Ireland, St Patrick (*cf.* Windisch, *I. T.*, i. 7, 48) invokes various virtues *fri bricuta ban ocus goband ocus druad*, "against the incantations of women, smiths, and Druids." Again, the well-known Slavonic saints, Kuzma and Demian, who otherwise pass as skilful physicians (φαρμακεῖς, like the Dactyli), appear in Russian popular tales "as holy and supernatural (γόητες) smiths, in frequent conflict with snakes" (*cf.* W. R. S. Ralston, *Russian Folk Tales*, p. 70, and *The Songs of the Russian People*, p. 198). The Teutonic figure of Wieland is an equally magical person throughout, and in the Finnic and Esthonian north, also, a good piece of the smith's art cannot dispense with magic. At any rate, the way in which, both in the Wilkina saga (*cf.* p. 94 of Hagen's edition) and in the Kalevipoeg (cf. *Ges.*, vi. 399–416), the forging of famous swords is represented shows that in the period of these monuments a skilful smith could not be conceived as practising his craft without the aid of hidden arts. In Greece and Germany, stories, almost absolutely identical, were told of master smiths who worked invisible. Even Pytheas in his γῆς περιόδῳ states that invisible smithying was carried on in the islands of Lipara and Strongyle. You laid down the unwrought iron, and on the next day received, ready made, the sword, or whatever it was that was wished for (*cf.* Schol. to Apoll. A., iv. 761). Precisely the same story is told in England and Germany, especially in Anglo-Saxon (cf. *K. Z.*, iv. p. 96, *f.*, and A. H. Kuhn, *Sagen, Gebräuche und Märchen aus Westfalen*, i. Nos. 36, 40—of invisible water-smiths—49, 52, 53—invisible Sgönauks—55, 76).†

The number (three) of the mythical smiths (Κέλμις, Δαμναμενεύς, Ἄκμων; *cf.* p. 165, note) which we have met with amongst the Greeks, and which recurs amongst the ancient Germans and Romans, deserves to be noted. Not only has Völundr two brothers in the Edda, an old German *buoch* expressly names as the most famous

* The passage of the *Phoronis* runs:—

Ἔνθα γόητες
Ἰδαῖοι Φρύγες ἄνδρες, ὀρέστεροι οἰκί' ἔναιον
Κέλμις Δαμναμενεύς τε μέγας καὶ ὑπέρβιος Ἄκμων,
Εὐπάλαμοι θεράποντες ὀρείης Ἀδρηστείης,
Οἳ πρῶτοι τέχνην πολυμήτιος Ἡφαίστοιο
Εὗρον ἐν οὐρείῃσι νάπαις ἰδέντα σίδηρον
Ἐς πῦρ τ' ἤνεγκαν καὶ ἀριπρεπὲς ἔργον ἔδειξαν.

Cf. Strabo, c. 473, ἄλλοι ἄλλως μυθέουσιν, ἀπόροις ἄπορα συνάπτοντες . . . . . πάντες δὲ καὶ γόητας ὑπειλήφασι . . . . . Other names of the three master smiths are:—Chalkon, Chryson, Argyron, or Λύκος, Κέλμις, Δαμναμενεύς, or Μύλας, Λύκας, Κόρυθος (?). As to these and their meaning, *cf.* Prellwitz, *loc. cit.*

† Exactly the same thing is related of the Veddahs of Ceylon: "When they wanted a weapon, they took a piece of meat by the night to the workshop of a smith, hung up a leaf cut out in the shape of the desired weapon by the side of it, and if the work was done according to the pattern, they took it away and brought more meat." *Cf.* J. Lubbock, *Prehistoric Times*, i. 60.

smittemeister (three smiths) Mime, Hertrich, and Wieland; and, so too, a prose conclusion of the old French romance of Fierabras speaks of three brothers, Galand (Wieland), Magnificans, and Anisiax, who wrought nine famous swords (*cf.* W. Grimm, *Die deutsche Heldensage*, pp. 146 and 43). A. Kuhn also, *loc. cit.*, i. No. 92, knows a story of three smiths called Kröse. It should be noted that the Hindu *ṛbhú* appear in threes. *Cf.* B. R. (dictionary).

If, however, the smith is credited with the highest degree of skill possible to man, it is not difficult to understand that other arts were also ascribed to him. Particular mention must be made here of the smith's skill not only in medicine, which we have already alluded to, but also in music, poetry, and the dance. As the Ἰδαῖοι Δάκτυλοι, although they are first and foremost the powers that presided over the most ancient metallurgy, nevertheless are said to have brought the first melodies from Phrygia to Greece, and to have invented the dactyl; so, too, the German elves have "an irresistible tendency to music and the dance" (*cf.* Grimm, *Myth.*[3], p. 438). To no idea are the words smith and smithying so often applied as to that of poetry and song (O.N. *ljóðasmiðr*, O.H.G. *leodslaho*, to smithy verses, &c.), and even in the later Middle Ages poet-smiths are known (*cf.* W. Wackernagel, *Kleinere Schriften*, i. p. 49).

The note of mysticism, which characterises the production of works of the smith's art, appears however in another point common to Greek and German smith sagas: that is, the element of treachery and fraud, which is wont to reside in the best works particularly. The invisible bonds with which Hephæstus surrounds his marriage bed, Hera's throne ἀφανεῖς δεσμοὺς ἔχων, the necklace of Harmonia, which brings misfortune even to the last generation, are evidence of this on classic ground. In the same way, on Teutonic ground, Völundr-Wielant is a deceitful fellow. When he has killed King Niðuðr's sons, it is said of him: "The skull under the hair I set in silver and sent to Niðuðr. Of the eyes I made precious stones and sent them to Niðuðr's false wife. Then from two of the teeth I made an ornament for the breast and sent it to Böðvildr" (Simrock). Reigin and Mime again are depicted by the German saga as wily, treacherous smiths. In the Finnic Kalevala swords are whetted by Hiisi, the evil principle; and it is Hiisi's birds, the hornets (*cf.* ix. 230, *f.*), which drop the black venom of adders, the hiss of poisonous snakes, &c., into the steel.

This conception, however, has been most characteristically developed by the ancient Germans.

Amongst them Wieland gradually became the deceitful, treacherous magician, and it was inevitable when the Christian world procured the northern countries the acquaintance of the devil that the priests should eagerly avail themselves of the person of the malevolent smith to illustrate the Christian idea of the Evil One to their heathen flocks. It is beyond all doubt that the old German conceptions of the smith and the devil have many features in common. The devil is the *swarze* master of soot-begrimed hell,

he smithies and works like Wieland, above all he is *hinkebein* (*diable boiteux*) like the Norse Völundr and the Greek Hephæstus, with the latter of whom he has further in common his fall from heaven (St Luke, x. 18, and *cf.* Grimm, *Myth.*[4], p. 945, and iii.[4] p. 294). The devil who smithies invisible (*cf.* above, p. 165) is mentioned by A. Kuhn, *loc. cit.*, i. No. 56. But the length of time that traces of the idea that the smith was a magician, and in league with the devil, continued to exist in Germany is shown by the interesting tale by Parson Petersen in the seventeenth century (in Freytag, *Bilder aus der deutschen Vergangenheit*, iv. p. 50, *f.*) of the "hereditary smith," who is said to knock out the eye of an unknown thief by means of all sorts of diabolical arts.

The transference of the art of smithying from divine and supernatural beings to men, and the gradual growth of a special guild of smiths, are best illustrated from Teutonic antiquity. Whereas, as far as I know, no hero or demi-god is mentioned by name in classical tradition as making his sword or his shield for himself; amongst the Germans we come across numerous heroes of noble birth who know how to work at the smithy for themselves.* I mention here Skallagrim, Kveldulf's son, in Iceland (*cf.* Weinhold, *Altn. Leben*, p. 93), young Siegfried, Albuin, the king of the Longobardi, and others (*cf.* Paulus Diac., i. 27). Names of other half mythical, half historical smiths are: Mime, Hartrich, Eckenbrecht, Mimringus, Madelger, Amilias, &c. Wealthy men erected smithies in their forests, the remains of which are still to be traced in Iceland and in the west of Germany by the charcoal and slag. In Ireland also the most ancient smithies were placed in the most sequestered woods (*cf.* O'Curry, *Manners and Customs*, ii. p. 246); and so, too, in the Esthonian saga (vi. 147, *f.*), Kalevipoeg after wandering long finds hidden in the deepest depths of the wood the only smithy in which he can obtain his magic sword:—

> Then at length the doughty wanderer
> Saw the beauteous dale before him.
> When he entered on the valley,
> While yet distant, to his ears
> Came the roar of bellows blowing,
> And the beat of hammers striking,
> As, to time, they smote the anvil, &c.

The Fridolin saga, which turns on a smithy of this kind, extends to all branches of the Teutonic family (*cf.* Weinhold, *op. cit.*, p. 94, *f.*). Skilful smiths were held in the highest esteem. King Geiserich even elevated one to the rank of count; and the killing of a smith, especially a goldsmith, is always threatened by the laws with a

* The young hero of Esthonia may be compared in many points with Sigurd-Siegfried. As the latter with his hammer drives *in die culc* the mighty anvil of the smith Mime, so with his magic sword Kalevipoeg cleaves—

> The heavy anvil,
> And the block with rings surrounded
> Which upheld it, to the bottom

much heavier fine than in the case of other vassals (*cf.* Wackernagel, *Kl. Schriften*, i. p. 46).

In Finland, smiths to the present day stand in the highest estimation. They are presented with brandy to keep them in good temper, and the proverb runs:—

> Fine bread always for the smith, and
> Dainty morsels for the hammerer.

(*cf.* Ahlqvist, *op. cit.*, p. 60).

Finally, the custom of giving a sword a name of its own, as though it were a living being (*cf.* Siegfried's Balmung, Wieland's Mimung, Beovulf's Nägling, Roland's Durndart, &c.), appears to be confined to the Teutons.

Herewith we conclude this brief collection of the traits of affinity between Indo-Germanic and non-Indo-Germanic stories of the smith. It may readily be made more complete by those of greater knowledge.

To sum up the results of this chapter it has been shown first that in the linguistic relations of the Indo-Europeans no reason is to be found for referring the development of the smith's craft to the primitive Indo-European period; and, secondly, that the ambiguity of the myths and stories relating to the smith and his art does not seem to us adapted to compensate for the lack of linguistic proof.

We now turn to the history of the individual metals themselves, from which we hope to obtain more trustworthy data for the problem under discussion.

CHAPTER IV.

GOLD.

GOLD, renowned in story; gold, which glitters in the sands of rivers, and is usually deposited in the veins of mountains pure and unmixed; gold, the beautiful gleam of which rouses the desire of the savage as much as the ease with which it can be worked attracts the artistic sense of more civilised man; gold, highly prized and highly abused, which is decried by moralising poets now as *melius irrepertum* now as *ferro noventius*, but which is equally desired by all, won for itself its high position in the esteem of man in an age that lies beyond the beginning of all history. The ancients indeed can tell of a time when in the words of Lucretius (v. 1272):—

Fuit in pretio magis æs, aurumque jacebat propter inutilitatem;

but this view of a whilom contempt for gold as compared with the other metals finds no support in actual fact.

The very dawn of history illumines a land richly blessed by the concourse of the most precious metals—Egypt (*cf.* Lepsius, *Die Metalle in den ägyptischen Inschriften*, Abh. der Berl. Ak. d. W. phil-hist. Kl., 1871, p. 31). With especial frequency do the Æthiopians and the southern nations generally appear in representations and inscriptions, bringing rich tribute from their auriferous home in the shape of purses, rings, plates, bars, bricks. But the Assyrians also, the *Rotennu* of the inscriptions, and various tribes of Syria, the Tahi, the Chetites, the people of Megiddo, are represented as gold-bringing tributaries, which points to the inference that in ancient times gold as well as copper may have been mined with success in Lebanon.

The name for gold in Egyptian is *nub*, Koptic *noub*, whence Nubia seems to derive its name. The figurative symbol for gold, , which has been preserved in Benihassan in its original form, , represents a cloth folded, with two corners, in which the grains of gold were washed and shaken. In the older symbol the sac or bag can be recognised with the water trickling out (*cf.* Hebr. *sâqaq*, G. σακκέω). In Thebes the bag was shaken in the air by two people. Over it is written "preparing gold." In ancient Egyptian inscriptions two kinds of gold are

distinguished: *nub er set*, "gold of the cliffs," mountain gold, and *nub en mu*," river gold," the latter of which is collected at the present day in quills, under the name of sinber, by the negroes on the Blue Nile.

It is scarcely open to doubt that it was river gold which first attracted the attention of man. For, if what Strabo, c. 146, says, perhaps with some exaggeration, is true, that in the auriferous sands of the Turdetanian rivers occasionally masses weighing half a pound (called πάλαι*) are found, the same may have been the case in rivers of other auriferous lands at the time when gold first began to be worked;† though it also seems that in times of remote antiquity the precious metal was to be obtained from mountains with the expenditure of less energy than it is now. Polybius (in Strabo, c. 208) relates that amongst the Norie Taurisci a gold mine was found so productive that it was only necessary to remove the soil two or three feet in order at once to find gold that could be worked, and so on.

In ancient Egypt accordingly the mining of gold goes back to times of the remotest antiquity. A very interesting description of the ancient Egyptian gold-mines as they are supposed to have been worked even by the ancient kings has been transmitted to us by Diodorus Siculus (iii. 12, 14). He paints in gloomy colours the misery of the thousands of hapless criminals condemned by the sentence of the king to life-long penal labour in the mines, as they ply their cruel work in fetters, without rest night or day, driven by the merciless lash of their overseers, with lamps on their brows, gliding like ghosts through the gloomy galleries, without care for their bodies or clothing for their nakedness, so that the writer concludes with the words: αὐτὴ γὰρ ἡ φύσις, οἶμαι, ποιεῖ πρόδηλον ὅς ὁ χρυσὸς γένεσιν μὲν ἐπίπονον ἔχει, φυλακὴν δὲ χαλεπὴν, σπανὸν δὲ μεγάστην, χρῆσιν δὲ ἀνὰ μέσον ἡδονῆς δὲ καὶ λύπης.

The proximity of a country famous for its rich gold deposits, and for the early practice of the arts of preparing and working gold, renders it probable that the Semites, who were connected by numerous historical ties with Egypt, had learned even in the earliest periods of their history to value and seek the precious metal. And, as a matter of fact, the Semites' acquaintance with gold seems to go back to the time when they originally formed one community. At least this may be inferred from the agreement of several Semitic peoples in their names for this metal: Hebr. *zâhâb*, Arab. *dsahab*, Chald. *d(ĕ)hâb*, Syrian *dahbo*, Origin. Semit. *dahabu*, and Assyr. *hurâṣu* = Hebr. *châruz* (only used poetic-

* Probably an Iberian word. *Cf.* Pliny, *Hist. Nat.*, xxxiii. c. 4, s. 21: "Aurum arrugia quæsitum non coquitur, sed statim suum est. Inveniuntur ita massæ. Nec non in putei setiam denas excedentes libras Palacas (Hispani vocant), alii palidarnas; iidem quod minutum est baluceni vocant." *Cf.* Diefenbach, *Origines Europææ*, p. 240.

† The ancients often tell of streams that produced gold in earlier times. Thus (according to Strabo, c. 626) it was the Pactolus, which has its source in the Tmolus, that brought Cresus his enormous wealth. But even in Strabo's time ἐκλέλοιπε τὸ ῥεῖθρον.

ally). Both words connote "the glistening, shining metal." A third designation, Hebr. *ketem* (synonymous with *zāhāb*), occurs in the Egyptian *kabsaā* (*Z. f. ägypt. Spr. und Alterth.*, x. pp. 44 and 114, and xii. p. 149).

A special term for gold not connected with these words, *gushkin*, the meaning of which is given as the "pliant metal," was possessed by the Sumerian population of Babylon. But this word, like the other Sumerian names of metals, with the exception of copper, appears for the first time in relatively recent texts (with ideograms compounded), and the linguistic formation according to Hommel (*Die vorsemitischen Culturen*, Leipzig, 1883, p. 409, *f.*) indicates that the Sumerians obtained their knowledge of most metals, and amongst them of gold, in or from Babylon.

Through the ancient gate of nations, and of Median and Semitic intercourse, through the passes of the Zagros chain we come for the first time on to Indo-Germanic ground. A triangle, drawn from the northernmost point of the Persian Gulf and the southernmost point of the Caspian Sea to the mouths of the Ganges, includes roughly the abode of a group of peoples, which, as we have seen, were united from the earliest period of their history by the closest bonds of speech and civilisation—the Hindu-Persian branch. Was this branch already acquainted with gold at the time when it was still geographically united? We may venture, I think, to say "yes" to this question. The ancient name of this metal in the Vedas, *hiraṇya*, corresponds, not only in the root-syllable, but also—and to this, as we have seen, especial weight must be attached—in suffix, with the *zaranya* of the Avesta. In neither language is a trace of an earlier meaning (*cf.* above, p. 129) retained. In all modern Persian dialects—in N. Pers. *zar*, *zer*; in Kurd. *zer*, *zîr*, *zêr*; in Afghan *zar*; Belúchee *zar* (*Z. K. M.*, iv. p. 425); in Bokharian *zêr* (Klaproth, *As. Polyglt.*, p. 252); Parsee *zar*—the word recurs, and also beyond doubt in the remotest member of Iranian, Ossetic, where it occurs as *zazgharin* (in the Digoric dialect *zugh-zarine*, "pure gold"; Hübschmann, *Osset. Spr.*, p. 56). Parsee *tilá*, N. Pers. *tilah*, *tilé*, *tilâk*, Arab. *telâ* is isolated (cf. *Z. d. M. G.*, xxxvi. p. 61).

As in other respects so in its name for gold, Armenian stands remote from the Hindu-Persian languages, except in so far as the Persian *zar* has penetrated into it, in the shape of such loan-words as *zarik*, "leaf-gold, tinsel," &c. (cf. *Z. d. M. G.*, xxxv. p. 558).

Gold in Armenian is *oski*, which can scarcely be Indo-Germanic or of ancient Armenian origin. It resembles—more it is impossible to say—on the one hand the above-mentioned Sumerian names for gold, *gushkin*, *gushgin*; on the other, the Georgian *okro*, *okri*, "gold," which has passed into some North and West Caucasian languages;* and, perhaps, also the Finn. *vaski*, "copper, bronze" (*cf.* P. Jensen, *Z. f. Assyr.*, i. 254), since elsewhere also in the East Asiatic languages we have proof of a change between the meanings

* For the rest the Caucasian names for gold (Lesghian *mosed*, *mesed*, Mizdjeghian *ðesi*, *desva*) stand quite isolated.

"copper" and "gold" (Ekkut. *altun* "copper:" the usual meaning of "gold" elsewhere in the Turko-Tataric languages).

Our assumption that gold was known in the primitive Hindu-Persian period, which is shared both by Geiger (*Museon*, iv. 17) and by Spiegel (*Arische Periode*, p. 33), finds further support in the nature of the country, in which we must suppose the Hindu-Persian period to have been spent. Not only the most important tributary of the Oxus, the Polytimetus of the ancients, which at the present day is called *Zerafschân*, "the gold-bearer," but also the streams which descend north and south from the Hindu Kusch, carry sand glittering with gold in their waters, which must have early attracted the attention of the population. The same holds good of the streams which flow down the west and south-west sides of the Himálaya.*

According to the views of the ancients, especially of Herodotus and Megasthenes, India, in consequence of an erroneous application to the whole of it, of what was known as to the north-west of it, passes as a country blessed with gold. Pliny (*Hist. Nat.*, vi. 20) tells of a gold and silver island, Chryse and Argyre (east of the estuary of the Ganges, later χρυσῆ χερσόνησος, modern Malacca; *cf.* Kiepert, *Handbuch d. a. Geog.*, p. 42). "Thou gold-abounding Sindhu," "thou river with the golden bed" (*hiraṇyáyî, hiraṇyavartanî*), are the terms applied in the hymns of the Rigveda to the Indus. Gold-mines, and also gold-washing (Zimmer, *Altind. Leben*, p. 49, *f.*), are mentioned, and generally a consuming passion for the precious metal is displayed in the most open fashion by the worthy poets of the Rigveda. Again, the custom of cleaning the gold obtained from the mines with water, which we came across in Egypt, is mentioned in Vedic texts (*bádbhyó hiraṇyaṃ punanti*); *cf.* Zimmer, *Altind. Leben*, p. 49 *f.* A luxuriant terminology flourishes in later Sanskrit for the metal, the object of desire to all.†

Of these later Sanskrit names for gold I will only call attention to one, which in a fabulous shape found its way to the west at a very early period. Herodotus (iii. 102–105), and others after him, informs us of a valiant people in the north of India who set out into the desert on camels at the first streak of dawn to fetch gold. "There are ants there, in size between a dog and a fox, and of extraordinary swiftness, which burrow in the earth, after the fashion of ants, and throw up heaps of golden sand. The

* As is well known, some scholars have endeavoured to find in Sans. *rasâ* (a mythical river of the extreme north)=Zend *raṅha* (mythical stream) a recollection, common to both branches of the Hindu-Persian group, of a great river in the land from which they came, the Jaxartes (Ἰάξης). *Cf.* Spiegel, *Arische Periode*, p. 107.

† *Cf.* Pott, *Etym. Forschungen*, ii., p. 410, *f.* He reviews Hindu names for gold under four heads: sheen and colour, real or imaginary place of discovery, qualities or laudatory epithets, uncertain origin. *Cf. ib.* for the Sanskrit names of the other metals. Naraharí's *Râjanighantu* (in the middle of the thirteenth century of our era), ed. by R. Garbe, Leipzig, mentions forty-two names for gold (*cf.* p. 33, *f.*).

thing is to load the camels with this sand as rapidly as possible and get home before the cool of the day. For though these ants remain concealed during the heat, afterwards they come out of their holes, and guided by the scent give chase to the gold-robbers.* This story, which was widely spread in antiquity, is alluded to in Hesychius' gloss μεταλλεῖς· μύρμηκες." Now, as a matter of fact, there is a kind of gold called by the Hindus *pipîlika*, "ants" (*Mahâbhârata*, ii., 1860), brought from a North Indian tribe named the Darada, who were called gold-hunters even by the ancients, and according to Lassen it is probable that the name indicates a kind of marmot animal still to be found in the sandy plains of Thibet, which lives in communities and burrows like ants. The sand thrown up by these creatures may often have contained gold, and may have caused the Hindu gold-seekers to imagine that these animals had a peculiar instinct for discovering the metal.

Another explanation of the story of the gold-digging ants assumes that by these mysterious beasts we are to understand a Thibetan variety of the human species; and, indeed, recent explorations in Thibet have revealed numerous families of Thibetan gold-diggers living together in communities, and they, in the depths of winter, wrapped up to the ears in hides and skins, guarded by great, fierce dogs, dig with long iron spades for the gold which is to be found in abundance (cf. *Ausland*, 1873, p. 39).

Now that we have traversed the ancient civilisations of the East, from the banks of the Nile to the Oxus and the Jaxartes, and have found everywhere that joy in the precious metal and longing for it go back to a point in time which can only be reached by means of Comparative Philology, let us return to our own quarter of the globe, Europe.

Nature has not entirely refused her good things to Europe either. We have accounts even in antiquity of the wealth of Spain, Gaul, Switzerland, Noricum, Macedonia. Time after time gold has been discovered in Great Britain and Ireland, in Bohemia, Austria, Hungary, in the sands of the Danube, the Rhine, the Moselle, the Eder, the Schwarza, the Rhone, &c., though frequently it has only made but a poor return for considerable labour. Amongst the most important prehistoric finds of gold in Europe belong those discovered in Hungary, Siebenbürge, in the Norselands, and ancient Scythia. Hallstadt also and Mycenæ exhibit gold; the Swiss lake-dwellings but little, as at St Aubin and Mœringen. M. Much, who, in his book *Die Kupferzeit in Europa*, deals with gold also in ancient Europe (p. 176, *ff.*), comes to the conclusion in the first place that gold appears much later than copper in the culture of the European Aryans; next, that it appears first of all in the south-east of their region, whither it may have made its way through the influence of Asiatic and Semitic culture.

* *Cf.* also Heliodorus, *Æthiopica*: παρῆσαν μετὰ τούτους (Seri bringing silk, and Arabians bringing spice), οἱ ἐκ τῆς Τριγλυδυτικῆς, χρυσὸν δὲ τὸν μυρμηκίαν . . . . . προσκομίζοντες, x. 26, and Philostr. Apoll., vi. 1.

A sure decision as to the origin and spread of gold in Europe can scarcely be reached this way. Let us, therefore, commit ourselves to the guidance of Comparative Philology here again, and follow it first to the starting-point of European civilisation, the classic region of the Mediterranean.

In Greek gold is χρυσός, a word which various *savants* refer to a stem-form *χερ-τιος or *χρυ-τιος, compare with the Hindu-Persian names for gold given above, and then use as an argument to show that the original Indo-Germanic period was acquainted with gold. I will not here go into what seem to me the insuperable grammatical difficulties in the way of this comparison, I would only point out that even if the correctness of such a stem-form as χερ-τιος or χρυ-τιος for χρυσός be granted, it is quite out of the question to draw a satisfactory conclusion from it as to the existence of a word for gold in the vocabulary of the primeval Indo-Germanic language, because of the complete dissimilarity between its suffix and those of the Asiatic words (*cf.* above, p. 133).

All difficulties vanish the moment we decide, in company with Renan, V. Hehn, Benfey, and others, to see in the Greek χρυσός a loan-word from the Hebr. *ḥarûṣ*, Assyr. *ḫurâṣu*, which the Phenicians, whose agency in this matter has the most claim on our notice, may well have been acquainted with, owing to the affinity of their language with that of the Northern Semites, and which, as inscriptions recently discovered show (*cf.* V. Hehn, *Kulturpflanzen u. Haustiere*[4], p. 161; *Z. d. D. M. G.*, xxx. 137), was the usual name for the gold. That the Phenician, to whose skill in mining obvious reference is made in Job xxviii. 1–11 ("silver has its veins and gold has its place of melting," &c.), opened the first gold-mines in Greece, on the Island of Thasos and Mount Pangæum, is a fact which has long been recognised. Herodotus, who had inspected the mines abandoned by them on the south coast of Thrace, states that here the Phenicians had undermined a whole mountain. *Auri metalla et fluturam*, says Pliny, vii. 197, *Cadmus Phœnix ad Pangæum montem invenit*. A list of mines worked by fabulously wealthy kings of Asia Minor and Greece is given by Strabo, c. 680.* Arabia, too, was a great centre of Semitic wealth in gold. The fact that the expeditions of the Phenicians to the eastern coast and district of Greece took place in the fifteenth century, explains how it is that χρυσός is at home in Greek from the very beginning, and is in common use for forming names of persons and places. For the rest, as to the gleam of gold which irradiates the Homeric world, what a famous antiquary

* ὡς ὁ μὲν Ταντάλου πλοῦτος καὶ τῶν Πελοπιδῶν ἀπὸ τῶν περὶ Φρυγίαν καὶ Σίπυλον μετάλλων ἐγένετο. ὁ δὲ Κάδμου [ἐκ τῶν] περὶ Θράκην, καὶ τὸ Παγγαῖον ὄρος. ὁ δὲ Πριάμου ἐκ τῶν ἐν Βατύροις, περὶ Ἄβυδον χρυσείων. ὧν καὶ νῦν ἔτι μικρὰ λείπεται· πολλὴ δ' ἡ ἐκβολὴ καὶ τὰ ὀρύγματα σημεῖα τῆς πάλαι μεταλλείας. ὁ δὲ Μίδου ἐκ τῶν περὶ τὸ Βερμιον ὄρος. ὁ δὲ Γύγου καὶ Ἀλυάττου καὶ Κροίσου ἀπὸ τῶν ἐν Λυδίᾳ . . . . . τῆς μεταξὺ Ἀταρνέως τε καὶ Περγάμου πολίχνη ἐρήμη ἐκμεταλλευμένα ἔχουσα τὰ χωρία. *Cf.* Groskurd's Translation, iii. p. 98. A careful collection of all the places in which finds of gold have been made is given in Blümner, *Termin. und Technol.*, iv. 12, *ff.*

(Schoemann) remarks may be accepted, *cum grano salis*, in spite of Schliemann's discoveries: "Can any one doubt that all this is poetic gold, with which it was no harder for Greek singers to deck out their heroes than it was for the poets of the Middle Ages to deck out the heroes of Teutonic sagas, where also red gold is plenty?"

At any rate, according to Hdt., ii. 69, the Lacedæmonians even in the sixth century, when they wished to erect a statue to Apollo, had to send to Cresus of Lydia to buy the necessary gold. Cf. further, Blümner, *Term. u. Techn.*, iv. 11.

So, too, it was from Semitic Asia Minor, though at a much later date, and not through Phenician agency, that the *μνᾶ* (Lat. *mina*), which first occurs in Herodotus, penetrated to Greece from Assyr. *manah*, which reappears in Akkad. *mana* and Egypt. *mn*, but scarcely in Sans. *minâ* (M. Müller, *Biographies, &c.*, p. 115).

But though in this way it was from the Semitic world that the gleam of gold first shone upon the Greeks, still at a very early date news may have reached the Hellenes, through the Pontic colonies, of the gold treasures of metals that slumbered in the ravines of the Ural and Altai mountains.

Again, it is Herodotus (iv. 24–31) who tells us that in a land to the north-east of the Pontic factories, where the ground is frozen hard eight months in the year, and where the air full "of feathers" casts a wintry veil over the landscape, there dwells a one-eyed people, whom the Scyths call Arimaspi. As far as the baldheads, whose name is Argippæi, Hellenic merchants had penetrated, not however without having first had to cross a mountain (the Ural). But beyond them no Greek had pushed; for lofty, pathless mountains (the western end of the Altai) barred the way. Only so much was known with certainty: that to the east lay the Issedones, whose customs also were known. What, however, was known of the land of the Arimaspi and the gold-guarding griffins was learned from the Issedones. Indeed, the Turko-Tataric branch of the Ural-Altaic family of languages, situate at the western end of the Altai, must have observed the treasures offered to their notice by nature at a very early period. In spite of the enormous geographical area occupied by this family of peoples, of whom I will only name the more familiar Jakuts, Baschkirs, and Kirghishes, the Uigurs, Usbeks, Turkomans, and Osmânlis of Turkey in Europe and Asia, throughout the whole region from the Dardanelles to the banks of the Lena, the same name for gold, *altun*, *allyn*, *iltyn*, &c.,* recurs, a word which has penetrated to the extreme north-east of Asia, into the Samoyed and Tunguisic languages, and etymologically can hardly be dissociated from the name of the auriferous Altai (*cf.* Klaproth, *Sprachatlas in Asia polyglotta*, pp. 8 and 28). Still more noteworthy is it that on the vessels of gold and silver which have been discovered in the

* In Jakutic alone *altun* does not mean gold but copper, whereas gold in a very remarkable way is designated "red silver," *kysylû kömüs* from the Turko-Tataric word for silver. *Cf.* in later Sanskrit *mahârajata*, "great silver" = gold.

Altai district and in ancient Tschudic graves in large quantities, according to Sjögren (*cf.* above, p. 163; *loc. cit.*, p. 170), the picture of the fabulous griffin of antiquity has been observed. Amongst the Scythian tribes, too, Herodotus found much wealth of gold but no silver (iv. 71; Strabo, p. 163).

This strange northern world, then, touched the outposts of Hellenic civilisation as a land of marvels and fairy-tales, and it is quite possible that when brought into this connection another of the most beautiful of the legends of classical antiquity, the expedition of the Argonauts in quest of the golden fleece, acquires a special significance. Strabo, c. 499, was of this opinion. He mentions the wealth of Colchos in gold, and relates that the barbarians caught the gold in the mountain streams by means of perforated troughs and rough fleeces. This was the origin of the fable of the golden fleeces.* For the rest, the story of the Argonauts was not a native Greek tale, but belonged to the Minyæ, that is to say, in all probability was a tale of Phoinikо-Semitic navigation (*cf.* Kiepert, *Lehrbuch d. alten Geographie*, p. 242, and Peter, *Zeittafeln*², v. p. 11), which was subsequently worked up in the true Greek spirit.

We now proceed to the Italian tribes of the Apennine peninsula. The Latin name for gold is in Latin *aurum*, in Sabine (Paul. Diac., p. 9. 3) *ausum*, which points to an Italian stem-form *auso*. This form is properly compared with words such as Lat. *aurōra* (**ausōsā*), "dawn," *uro* (**usō*), "burn;" and, as is indicated by Lat. *aur-īgo*, "jaundice," it originally meant "shining," "yellow," then "gold." Here the one thing remarkable is that the Italians did not, like other Indo-Europeans who have special words for gold (*cf.* Sans. *hiraṇya* = Zend *zaranya*, and Goth. *gulþ* = O.S. *zlato*), draw upon the root *ghel*, "to be yellow," with which they were acquainted (Lat. *helvus*). To the latter, besides, must be referred Phrygian ἴλουρος (: G. χλωρός, "green, yellow"), "gold," and χλοινός (O.S. *zelenŭ*, "yellow, green"), which occurs in Hesych. without an ἐθνικόν.

No indication where the Italians may first have made acquaintance with gold, whether on the side of Etruria, Spain (Basque *urrea*, *urregoria*, "gold"), or Greece, is given unfortunately in language or elsewhere. It is noteworthy that no gold could be detected in the lake-dwellings in the plain of the Po. Still there was a decree even in the Twelve Tables, according to which all gold was to be excluded from burials: *excipitur aurum, quo dentes vincti.*

Clearer are the ways by which gold travelled from Italy to the rest of Europe. All Celtic languages have borrowed their word

* παρὰ τούτοις δὲ λέγεται καὶ χρυσὸν καταφέρειν τοὺς χειμάρρους, ὑποδέχεσθαι δ' αὐτὸν τοὺς βαρβάρους φάτναις κατατετρημέναις καὶ μαλλωταῖς δοραῖς· ἀφ' οὗ δὴ μυθεύεσθαι καὶ τὸ χρυσόμαλλον δέρος. Why O. Gruppe, *Wochenschr. f. klass. Phil.*, 1884, No. 16, will see in these and similar stories myths "of the conquest of the golden waves by the sun-god, after defeating the monsters of the night," I do not comprehend.

for gold from Latin. Irish *ór*, gen. *óir*, Cymr. *aur*, Cambr. *our*, *eur*, &c., come from the Latin *aurum*. We here have a delightful instance for the student of language, in which it is possible by means of cogent phonetic laws to establish in the most conclusive manner possible the fact that of two words one is a loan-word from the other. If the Italian form *ausom* were akin to the Celtic, it must for instance in Irish have lost its medial spirant, as is made clear by the case of Ir. *síur*, "sister," from **sisur* = Lat. *soror* from **svesor*; it could not possibly have developed an *r*, for such a phonetic change is absolutely foreign to Celtic.*

Hence, an important piece of chronology can be established. The change of *s* between two vowels into *r* was accomplished about the time of the Samnite war, the way for it therefore must have been paved in popular speech at least fifty years before. But this agrees most excellently with the time of the great Celtic movements southwards and eastwards which introduced the black day of Allia into the Roman calendar, when, according to the Roman story, the insolent Gaul threw his sword into the scales against a thousand pounds of Roman gold. After this time the Gauls are pictured as fond of gold and rich in gold (cf. *Diod. Sic.*, v. 27).

In the same way that Italian gold penetrated to the Celtic west, it also travelled to the Illyrian tribes of the northern Balkan peninsula. The sole remnant of these tribes, Albanian, presents us with *ār*, *ἄρ-ι*, which is certainly borrowed from the Lat. *aurum*; another word, *φλjορί*, *φλjορί-ου*, in the Gegic dialect *φλίορί*, *φλjορjυι*, for coined gold, which, like the Mgr. *φλωρί*, *φλουρί*, comes from *florinus*, *florinus*, &c., is also forthcoming.

What seems to be the oldest loan, however, from the Italian *aurum*, inasmuch as it was effected at a time when the *s* between the two vowels was still intact, perhaps occurs in the Baltic words, Pruss. *ausis* and Lith. *áuksas*. The latter form with the guttural inserted before the spirant is readily explained by the phonetic tendencies of the language (cf. Lith. *túkstantis*, O.P. *tūsimtons*: Goth. *þusundi*). As regards the path followed by this loan, it is known that in very early times there existed a trade-route between the Adriatic and the Baltic, by which the valuable product of the north, amber, was conveyed to the Italian south. Beads of amber are found even in the lake-dwellings of the Po (*cf.* Helbig, *Die Italiker in der Poebne*, p. 29). Now, by this route the north may have received, in exchange for the precious product of its sea, many pieces of the precious and baser metals from the south. What stands in the way of this ingenious but very bold conjecture of V. Hehn's (p. 461) is the circumstance that, thanks to Genthe's researches (*Ueber den etruskischen Tauschhandel nach dem Norden*), we know of a direct connection between the Etruscans and the amber coast of the Baltic, whereas the Romans made their first acquaintance with the amber through this well-known journey

* Further, there are still traces in Old Irish of the final *m* of the Latin *aurum*. *Cf.*, in Stokes, *Irish Glosses*, p. 162, the verse *Is ór ṅglan*, "he is pure gold."

of the Roman knight who, under Nero, *commercia privet litora peragravit* (*Plin. Hist. Nat.*, xxxvii. 3, 15).

So long, therefore, as it cannot be demonstrated that a name for gold existed in Etruscan corresponding to the Italian *auso-*, the relation assumed between the Lithu-Prussian word and the Latin must remain merely conjecture; as it would be equally possible that the Baltic languages possessed a word meaning "shining," "yellow" (*cf.* Lith. *auszrà*, "dawn"), corresponding to and etymologically related with the Lat. *auso-*, and that they employed it independently to designate gold (O. Pr. *ausis*, but why Lith. *áuksas* with *k*?).

The Lat. *aurum* found its way, though at a later period, into Old Scandinavian also. It was from the Romans that the Icelanders first got coined gold and named it *eyrir*, gen. *eyris*, pl. *aurar*, gen. *aura*, in opposition to the uncoined gold (*gull*) which they had long been familiar with, and which was generally kept in the shape of rings (*baugr*).*

Let us now for a moment leave our quarter of the globe and betake ourselves to another centre from which gold was distributed, Iran. The Iranian name for gold made its way into the languages of nearly all the eastern members of the Finnic race, and that at a time when the old suffixes could not have been lost, as they are in the New Persian and Afghan dialects of to-day. It is in Mordv. *sirnä*, Tscher. *sörtne*, Wog. *sorni*, Ostiak *sörni*, Wotiak and Syriah *zarni*. The Magyars also (*cf.* Hung. *arany*) brought it with them to their new home. On the other hand, the West Finnic languages, under the influence of Teutonic culture, all took the Teutonic word for gold, Finnic *kulda*, Esthon. *kuld*, Lapp. *golle*, &c. That we here have not to do with casual coincidences is clearly proved by the exactly analogous relation of the names for another metal, iron, as we will show at greater length hereafter.

Between the action of Roman influence on the one side and of Iranian influence on the other lies the domain of two great peoples, who are geographical neighbours, and according to the usual view form a closely connected group in the Indo-Germanic family of languages, the domain of the Lithu-Slavo-Teutonic peoples. We have already come across the agreement of Teut. *smida* and Slav. *mĕdi*, and we shall hereafter meet with many cases in which the northern tribes agree as regards points of metallurgy. The Slavs and Teutons agree in their name for gold also: Goth. *þuth* corresponds to the O.S. *zlato*, which runs through all the Slavonic dialects. As the Lithu-Prussian name for gold is divergent, it would seem that at the relatively very early time when an adjective meaning "yellow," and formed from the root *ghel*, established itself in the linguistic area of Teuto-Slavonic, in the sense of "gold," the

* An entirely different explanation of the O.N. *eyrir* is given by Ahlqvist, *Die Culturwörter in den westfinn. Spr.*, p. 192: he compares it with O.N. *eyra*, pl. *eyru*, gen. *eyrna* (Goth. *ausô*, Lat. *auris*), "ear," which is to be explained by the early custom of using the earlaps of certain animals as small change (!). An analogy is offered by the Russ. *polúschka* = "half an ear."

Baltic branch must have dwelt apart by itself. The Lettlanders may have possessed a word corresponding to the Lith. *áuksas* at an early period, and subsequently have exchanged it for the Slav. *zolto*.

For the rest, gold was known to the tribes of the north for a long time only as coming from abroad, and at first probably as coming from the east (*cf.* Baumstark, *Ausf. Erläuterung des allg. Teiles der Germania*, p. 291), before they learnt to discover it in their own mountains and streams. Herodotus (iv. 104) depicts the Agathyrsi, who dwelt in Siebenbürgen, which is rich in river gold, and in the neighbourhood of Teutonic tribes, as χρυσοφόροι. Nevertheless, in spite of Tacitus' idealising words, *Germ.* 5: *Argentum et aurum propitiine an irati di negaverint, dubito. Nec tamen affirmaverim nullam Germaniae venam argenti aurive gignere: quis enim scrutatus est?* *Possessione et usu haud perinde afficiuntur*, &c., the *auri sacra fames* invaded the north also at a very early period, as many passages in ancient authors show (*cf.* Baumstark, *op. cit.*, p. 292). Never has the curse which hangs over the golden treasures hidden in the depths of earth found more majestic expression than in the German Nibelungenlied. For the sake of the glittering metal, the fair-haired son of Germany learns to sell his arm to his country's foe, and his belief in the inexhaustible wealth of the north in gold was not the least factor in the persistent impulse of the northern tribes to press on against the ancient Roman empire, until at last they overthrew it.

To sum up, it has been shown that both amongst the Semitic peoples and the Hindu-Persian branch of the Indo-Europeans, that is almost throughout Asia Minor, acquaintance with gold goes back to proethnic times.

From Asia Minor gold travelled on the one hand through Phenician agency to Greece, on the other from Iranian ground to the Eastern Finns. Great influence on the further distribution of gold through Europe must have been exercised by Italy. The Italian word, the origin of which is not quite cleared up, found its way to the Celts, Albanians, Lithuanians, and in later times to the Scandinavians also. The Slavo-Teutons have a common name for gold, which must have established itself in this linguistic area at a very early date, perhaps owing to oriental influence. The Finns of the Baltic obtained their term for gold from the ancient Germans.

On the other hand, the members of the Turko-Tataric race originally grouped round the western end of the Altai ("the gold-abounding") appear to have been acquainted with the treasures of their auriferous mountain while yet in their original home, and stories of them even in Herodotus' time seem to have reached the outposts of Greek culture on the Pontus.

CHAPTER V.

SILVER.

Among the various fluctuations of the order in which, as we have already explained, the metals are enumerated in the monuments of the most ancient peoples, we must here call attention to the struggle which took place at an early time between gold and silver for the supremacy. It is in the oldest monuments, when the metals and other articles of value are being enumerated, that silver is placed much more commonly before gold than after it, and even of the Assyrian monuments it may at least be asserted that in them silver is mentioned as often before as after gold.

The preference, thus demonstrated, for silver to gold at a very early period in the history of human culture undoubtedly finds its explanation in the later and rarer appearance of that metal amongst the oriental nations and amongst mankind generally, a phenomenon which is clearly indicated by facts of archæology (*cf.* Lubbock, *Prehistoric Times*, pp. 3, 20, 22, 25), and is sufficiently explained by the circumstance that silver occurs only in mountains and not in the sands of rivers, and on the whole is not of such widespread occurrence, and is harder to get than gold. Certainly the original Semites (*cf.* F. Hommel, *Die Namen der Säugetiere*, &c., p. 415) seem to have had a word for silver (Assyr. *sarpu* = Arab. *zarfu*) by the side of Assyr. *kaspu* = Hebr. *keseph*) as well as for gold; but in the Indo-Germanic area there is no lack of clear indications of the relatively late appearance of the former metal. The oldest collection of ancient metals in ancient India (*Vâjasaneyisaṁhitâ*, xvii. 13) mentions immediately after *hiranya*, "gold," *âyas*, "ore," or rather "iron;" in the Rigveda the later word for silver, *rajatá* (clearly like *darçatá*, "visible," from the root *darç* and *yajatá*, "venerable," from root *yaj*), appears only once, in the adjectival sense "white," used of a horse; and if in another Vedic text our metal is described under the general expression *rajatám hiranyam*, "white gold,"* which is not worthy to be used as an offering (*cf.* Zimmer, *Altind. Leben*, p. 52, *f.*), this is but the same process as occurs in ancient Egyptian, where *hat*, Copt. *chat*, "silver," really means "bright, shining white," and has the symbol for gold as its determinative. In Sumerian also the word *ku-babbar*, "silver," which otherwise

* Another explanation of the Sans. *rajatám hiranyam* is given by A. Kuhn, *Zeitschrift f. ägyptische Sprache und Altertumskunde*, 1873, p. 21, *f.* He regards it as silver-gold = Egypt. *âsem*.

stands quite by itself, really means "white" or "shining" metal (F. Hommel, *Die vorsemit. Culturen*, p. 409).

Rajatá appears as a substantive in the meaning of "silver" for the first time in Hindu literature in the Atharvaveda* (*cf.* Zimmer, *op. cit.*, p. 53).

The Iranian dialects which, agreeing as they do in the name for gold, indicate their primeval acquaintance with that metal, show complete divergence in the designation of silver. *Erezata*, which corresponds to the Sans. *rajatá*, is confined to the language of the Avesta. The Afghans have no special word for silver, but call it *spinzar*, *i.e.*, "white gold." N.P. *sim*, Kurd. *ziw* belong, according to Spiegel (*Tradit. Lit. d. Parsen*, ii. p. 370), to G. ἄσημος, "unstamped," Mod. G. ἀσῆμι, "silver." Another N. Pers. term *nœqra* "*argentum liquatum*," Jezd. dialect *nuqrja* (*Z. d. D. M. G.*, xxxv. p. 403), Beluchee *nughra*, is Arabian (*nukrah*). The Ossetes, finally, have obviously borrowed their word *avžist*, *avžeste*, from the East Finnic languages Wotiak *azveś*, Syriah *eziś*, Hung. *ezüst* (Perm. *ozyś*, Wotj. *uzweś*, &c., "lead"), a culture route which we shall often have occasion to mention in our account of the metals.

If, then, careful examination of Sanskrit and Persian shows that these peoples' acquaintance with silver cannot go back to any great antiquity, it is self-evident that the agreement of Sans. *rajatá*, Zend *erezata*, Armen. *arcat^c artsath* with Lat. *argentum*, on which has been rested the assumption that silver was known to the Indo-Europeans before their dispersion, must be, at any rate as regards meaning, casual. But inasmuch as in countless languages, both Indo-European and non-Indo-European, silver is indicated as "white, shining," why may not the same adjective,† designating this colour, have been employed in different districts of the Indo-Euopean linguistic area to indicate the new metal? (*cf.* above, p. 120).

Nevertheless the coincidence between Zend and Sanskrit and Armenian may be due to an actual connection. Of all the countries of Asia Minor, Armenia, with the sea-board of the Pontus to the north, is the richest in silver. According to Strabo (c. 530), Pompey was able to exact from the defeated Tigranes no less than six thousand talents of silver. In Marco Polo's time silver-mines were worked, especially in the neighbourhood of Trebizond, with success (*cf.* Ritter, *Erdkunde*, x. p. 272). North-west of Beiburt is a mountain at the present day called *Gumish-Dagh* = "silver-mountain," and on it is a mining village *Gumishkhana*, "silver-town," in which,

* The *Râjanighaṇṭu*, ed. R. Garbe, p. 35, mentions seventeen later names for silver, of which those that are derived from the moon are the most interesting for the history of culture: *candralôhaka*, "moon metal," *candrabhûti*, "of the appearance of the moon," *candrahâsa*, "shining white like the moon."

† It appears, with modification of the stem, to have existed thus:—**rag* (= Sans. *raj-atá*), **ṛĝ* (= Zend *erezata*, Arm. *arc-at^c*), **r̥ĝ* (= Lat. *arg-entum*). The suffix was *-nto*. As to the Celtic words, *cf.* below.

In later times also names for silver are frequently obtained from words for "white." *Cf.*, *e.g.*, Bulg. *aspra*, Serv. *aspra*, *jaspra*, Alb. *asper*, &c.: ἄσπρος, "white" (Miklosich, *Türk. Elem.*, p. 8).

even in the year 1806, in spite of the rough methods of extraction, fifty-thousand piastres a month were obtained (*cf.* A. Soetbeer, *Edel-metall Produktion Ergänzungsheft Nr.* 57 *z. Petermanns Mitteilungen*, p. 37). Its name in ancient times was Ἄσιβα (*cf.* above, Kurd. *ziw*, &c., from Mod. G. ἀσῆμι); whence the silver coins with the legend Ἀσιβέων (Tomaschek, *Ltbl. f. o. Phil.*, i. 126).

If, then, we assume that in Armenia, which is rich in silver, a pre-existing adjective first established itself in the meaning of silver (Armen. *artsath*, before the sound-shifting **argat-*), this term might easily have travelled to Iran, which is poor in silver (*cf.* W. Geiger, *Ostiran. Cultur*, pp. 147 and 389, *f.*), and may have been conveyed thence by the primeval trade-route between Iran and India (*cf.* A. Weber, *Allg. Monatschrift*, 1853, p. 671) along the river Cabul to Hindustan. It may then have influenced the terms for silver in both lands. However, as we have said, such an assumption is unnecessary, especially as neither Northern India nor even Carmania or Bactria was entirely destitute of silver in antiquity (Blümner, *Term. u. Tech.*, iv. 31).

For the rest, Armenia is the starting-point of the knowledge of silver in another direction at any rate, as is shown by the permeation of the Armenian word into numerous Caucasian dialects (Awaric *aratz*, Cari *araz*, Quasi-Qumuq *arz*, &c.; *cf.* Klaproth, *Asia Polyglotta*², p. 105).

In Southern Europe the G. ἄργυρος is isolated from the other Indo-Germanic names for silver by its suffix -υρος, and it gives no indication of the quarter from which the Greeks first obtained their knowledge of the white metal. But tradition here again in a remarkable way leads to the neighbourhood, at least of Armenia, to the coasts of Pontus Euxinus. Even Homer (*Il.*, ii. 857) mentions the Pontic town Ἀλύβη with the words: τηλόθεν ἐξ Ἀλύβης, ὅθεν ἀργύρου ἐστὶ γενέθλη; and although in Attica, which was rich indeed in silver, but whose mines only attained to any importance shortly before the Persian wars (*cf.* J. F. Reitemeier, *Geschichte des Bergbaues u. Hüttenwessens bei den alten Völkern*, 1785, p. 67), the discovery of silver was ascribed to the tribal hero *Erichthonius*, yet according to another statement it was due to the distant Scythians. *Argentum*, says Pliny, *Hist. Nat.*, vii. 56. 197, *invenit Erichthonius Atheniensis, ut alii Æacus*, and in *Hygini Fab.* (ed. M. Schmidt), p. 149, it is said: *Indus rex in Scythia argentum primus invenit, quod Erichthonius Athenas primum attulit.*

The latter appearance of silver in ancient Greece is indicated also by the fact that the stem ἀργυρο- is scarcely ever used in the formation of names of persons and places, whereas the stem χρυσο- (*cf.* above, p. 174) is commonly so employed. It also deserves notice that in Homer the stem ἀργυρο- appears in compounds only four times, while on the other hand the stem χρυσο- occurs thirteen times. Under the influence of Phenician commerce, which first brought with it a tremendous flood of this metal, in consequence of

* ἄργ-υρος : ἀργός *rg-o-. *Cf.* Sans. *arju-na*, Lat. *argū-tus* ("bright-witted").

the early working of the Spanish silver-mines, in Greece (as also later in Italy) ἀργύριον (*argentum*) not χρυσός became the usual word for money.

In Italy, acquaintance with silver spread at a relatively early date, as is indicated by the agreement of Osc. *aragetud* = Lat. *argentum*. But the pile-builders of the Po do not seem to have been acquainted with it yet (*cf.* W. Helbig, *op. cit.*, p. 21).

No trustworthy clue as to whence Italy, so poor in silver, first obtained the white metal can be discovered. If its inhabitants first received it from Greek merchants and colonists in the shape of coin, ornaments, vessels, &c. (cf. *talentum* : τάλαντον, *phalera* : φάλαρα, *cratera* : κρατήρ, &c.), supposing the ἄργυρος of the Hellenic sailor sounded strange in the ears of the Italian farmer, the foreign sounding word may easily have been fitted with a suffix from the native dialect, in which formations in *-ento-* (*unguentum*, *flu-entum*, *cru-entus*, *sil-entus*) were not unfrequent.

It is not easy to determine the relation of the Celtic names for silver (O. Ir. *argat*, *arget*, Cym. *ariant*, Bret. *archant*, Corn. *arhanz*) to the Lat. *argentum*. To the Lat. *argentum* (**r̥g-n̥to*) a primitive and etymologically connected Celtic **arg-ento* (*cf.* O. Ir. *ard* = Lat. *arduus*, **r̥dh-vó-s*) might well correspond. As a matter of fact, it is seen preserved in Old Celtic names of towns *Argento-ratum* (Strassburg), *Argento-magnus*, *Argento-varia* (Arzenheim); only, everything is opposed to *argento* having here meant "silver." Diodonis Siculus (v. 27. 1.) utterly denies the occurrence of silver in Gaul (κατὰ γοῦν τὴν Γαλατίαν ἄργυρος μὲν τὸ συνόλον οὐ γίγνεται); Strabo, p. 191, knows of silver-mines only in the districts of the Ruteni (in the Department of Aveyron) and the Gabeli west of the Cevennes. For the rest, every trace of silver in ancient Gaul is wanting. It is, therefore, in the highest degree probable that in the ancient Celtic names of towns mentioned, *argento-* meant nothing else than the Vedic *rajatá*, *i.e.*, "white" (*cf.* Weissenburg, Weissenfels, Weisslingen, &c.). *Argento-ratum* according to this was "Weissenburg" (Ir. *ráth*, *ráith*, "Königsburg"). The ancient Celtic *argento*, "white," thus inferred, would then be applied by the Celts to designate silver when they came across the Lat. *argentum*.*

On the other hand, it is certain that the Roman word travelled east to the Illyrian tribes, and appears in Albanian as ἐργjέντ-ι (*ergjúnt*, *argjánt*, *argjan*, &c., according to G. Meyer). Here language confirms the course of the history of culture: for it was the Romans who first worked the wealth of the Illyrian mountains, particularly in silver (Kiepert, *Lehrb. d. a. G.*, p. 354; *cf.* also Albanian place-names such as *Argentaria*), but also in gold (Alb. *ár* = Lat. *aurum*). A second Albanian name for silver σέρμε-α and σερμά-ja comes from the Turkish (*sermaje*, "gold, capital"). But the Serv. *srma*, "silver," Old Serv. *sirŭma*, "*filum*," Turk. *sirmâ*, "gold thread," G. σύρμα, "*filum*," seem related (*cf.* Miklosich, *Die Fremdw. in den Slav. Spr.*, p. 127).

* Windisch takes a different view in Fick, *Wörterb.*, ii.[3] 801, and assumes that the Celtic names for silver were directly borrowed from Lat. *argentum*.

The Indo-Germanic languages of Northern Europe are united by a common word for silver: Goth. *silubr*, O.S. *strebro*, Lith. *sidabras*, Pruss. *sirablan*, acc.

The Teutonic word found its way on the one hand into Lappone (*silbba*), on the other through the influence of West Gothic (*cf.* J. Grimm, *Gesch. d. deutschen Sprache*, p. 11) into Basque, where it appears as *cilarra*. But we can scarcely assume that no genuine word for silver had previously existed in the native dialects of the Iberian peninsula, the extraordinary wealth of which in silver (*cf.* Strabo, 147, *f.*) was known to the most ancient peoples. A trace of such a name may, perhaps, be contained in the Iberian *Orospēda* = "silver-mountain" (Strabo, c. 161).

As regards the series of words belonging to the tribes of North Europe, phonetics point to loans, through old ones which are scarcely of Indo-Germanic origin. V. Hehn has put forward the hypothesis that the North European name for silver is to be taken in connection with the already mentioned Pontic town of Ἀλύβη, which in that case would, in accordance with Greek phonetic laws, have to be regarded as standing for Σαλύβη, "silver-town;" and so we should be led for the third time to the mountainous districts of the Black Sea.

It is obvious that this combination of V. Hehn's can scarcely be called more than an ingenious conjecture, which, moreover, has great phonetic difficulties to contend with; only it seems to me still the best that has been made on the obscure series of North-European words—whose very relation to each other is by no means clear.*

The Thracian σκάρκη, which occurs in the Hesychian gloss σκάρκη· Θρᾳκιστὶ ἀργύρια, is quite beyond explanation.

The West Finns obtained their knowledge of silver, not indeed from Armenia, but probably from the neighbouring Iran, if we may believe with Sjoegren, that the Finnic names, Finn. *hopea*, Esth. *hõbe*, *hõbbe*, Weps. *hobed*, Wot. *opea*, *õpea*, Liv. *ōbdi*, *ūodi*, Tschud. *hobet*, are to be traced to the Persian *sepid*, Kurd. *sipi*, "white," &c. (cf. *Bulletin de l'académie de S. Pétersbourg*, vi. p. 172). Ahlqvist (*op. cit.*, p. 67) cannot explain these words.

For the rest, the spread of silver from the Pontic district to the barbarians of the north cannot have occurred by the time of Herodotus, as he expressly (*cf.* iv. 71, ἀργύρῳ δὲ οὐδὲν οὐδὲ χαλκῷ χρέονται; *cf.* also i. 215) denies the knowledge and use of this metal both to the Scyths proper and to the Eastern Massagetæ.

The oldest evidence for the presence of silver in Germany is that of Cæsar (vi. 28), who mentions the use of drinking horns ornamented with silver. Tacitus (*Germ.* 5) knows that the nobles possessed silver vessels, presents from abroad. Silver-mines in the country itself, therefore, must have been still unknown at this time. In the year 47 A.D., indeed, Curtius Rufus had a silver-mine opened *in agro Mattiaco* by his soldiers, but it appears to

* Extremely bold conjectures on them, and Ἀλύβη (Χαλύβη) are made by H. Brunnhofer, *Ueber die älteste Herkunft des Silbers und Eisens in Europa*, based on place-names in Asia Minor (*Fernschau*, Aarau, 1886, i. 54).

...urns (cf. *Tâç. Annals*, xi. ... for the first time in the ... is in harmony with this ...ces consisting of words ... (*cf.* Förstemann, *Deutsche* ...d of names of persons.

...ermanic words for silver, ...ich, in the mouths of the ... India into Europe: Zig. ...ind. *rupâ*, as also the gipsy ...omes from Sans. *svarṇâ*, ...4 and 226).

... for silver which we have ... and non-Indo-Germanic ...s their etymology is clear, ...r whitish metal. On the ... the name for silver which ...taric tribes (*cf.* Klaproth, ...*kömüs*, *kümüs*, inasmuch as ... "to hide," connotes the ...ore indicates that it was ...ry, *Die primitive Cultur*, ...ound traces of the practice ...came known relatively late, ...ld," and this is the more ...ng to careful examination of ... first attained.

...hich is obtained from mines ...varying percentage of silver ...l and silver was called in ...l in the enumeration of the ...immediately after gold. It ...gods, *âsem* of the goddesses," ...cent investigations by C. R. ..., 1871, p. 129), the Hebr. ... both as regards the object ...rd, to the Egyptian *âsem*, as ...ject indicated, the Greek ὁ ...η"), the Latin form of which, ...0): *omni auro inest argentum* ...*a parte*. *Ubicunque quinta* ... Indeed, in such passages as

φράζεο
...ατα ἠχήεντα
...γύρου ἠδ' ἐλέφαντος;

...βαυῖα

...ρος—Lepsius distinguishes ὁ

ἤλεκτρος, "silver-gold" ([illegible] ἡ ἤλεκτρος, "amber ornament," τὸ ἤλεκτρον, "am[illegible]er" commends itself to every unprejudiced reader [illegible] usual rendering "amber." Articles of electrum [illegible] and cups, have been found at Hissarlik, in the [illegible]ly in the third, city (*cf.* Schliemann's *Ilios*, pp. [illegible]h in the Iliad silver-gold is not yet mentioned.

Herodotus also probably means [illegible] his λευκὸς χρυσός, which Crœsus sends, along w[illegible] "refined gold" (Heb. *páz*), i. 50, to Delphi, [illegible] Lydian Pactolus was particularly rich (*cf.* K[illegible] *alten Geogr.*, p. 114). Finally, I feel no hesi[illegible] Celtic-Irish word *findruine*. I assume [illegible] **find-or-uine* and indicates the white (*find*[illegible] to *dergor*, the red (*derg*) gold. It stands betwee[illegible] and gold, and is mentioned together with si[illegible] buckles, and so on, are made from it (*cf.* W[illegible] O'Curry, *Manners and Customs of the Ancient* [illegible] Sullivan,* i. p. cccclxvi, *f.*).

We have shown, then, we hope, that in th[illegible] silver generally makes its appearance after [illegible] frequently derives its name "white gold."

The Indo-Europeans cannot have known [illegible] persion.

To discover the route by which the kno[illegible] travelled from people to people is more diffic[illegible] that in the original Indo-European language [illegible] "shining," "white," was in existence, whic[illegible] ployed in several linguistic areas to desig[illegible] the original adjectival meaning are still [illegible] distinguished.

The choice of this expression rathe[illegible] assumed, was influenced by a certain dep[illegible] area on another, *e.g.*, of the Celtic on the [illegible] the Hindu Persian on the Armenian. The [illegible] itself as regards the formation of its suffix [illegible] Slavonic branch diverges entirely from the [illegible] languages in its names for silver.

It is remarkable that the Finns, wh[illegible] independence in their names for gold, ap[illegible] genuine names for silver.

In the Turko-Tataric languages, also, sil[illegible] designation.

* Sullivan, on the other hand, thinks: "*Findr*[illegible] coated with tin or some white alloy like that of [illegible] from the obviously more recent form *finnbruithne*, [illegible] it into *find*, *finn* (white), and *bruinni* (boiled), "[illegible] plated surface."

CHAPTER VI.

COPPER.

If any conclusions whatever can be safely drawn from language as to the history of culture, then the best founded of them is that copper was known in prethnic periods to the whole of European and Asiatic mankind. The frequent outcrop of this metal in a pure state, as much as its red colour, which could not but attract the eye, especially of primitive man (*cf.* above, p. 119), may have drawn attention to it first of all.

In ancient Egypt, copper, which is usually mentioned as amongst the tribute offered by the Asiatic peoples, and is called *χomt*, counts amongst the oldest of metals. Its sign, , appears to have represented in its original form a crucible (Lepsius, *op. cit.*, p. 91).

In Sumerian the word for copper, *urud*, is the only name of a metal which is not written with compounded ideograms, a fact which, according to F. Hommel, *Die vorsemit. Culturen*, p. 400, *f.*, indicates the relatively high antiquity of this metal.

The original Semitic name for copper is in Hebr. *n(ĕ)choshĕt*, Arab. *nuhās*, Syr. *nechosch*, Chald. *nechasch* = Orig. Semit. *nahāšu* (Hommel).

But the Finns also, to turn to the country east and north of the Indo-Germanic domain, must have known copper before they left their original home on the Ural. Finnic *vaski*, Lapp. *veek*, *vieska* (*cf.* Hung. *vas*, which, however, means "iron"), recurs in Ugr. and Ostick, *wok*, "money, metal," whereas copper is *patarok*, which, according to Ahlqvist would be equivalent to "black copper." In the Finns' idea copper is always the oldest metal. The Sampo wrought by Ilmarine is copper, a copper mannikin fells the giant oak for the Wainamoine, and the eternal smith Ilmarine was born with a copper hammer. Perhaps it may be inferred from the traces of ancient copper-mines in Siberia, the so-called Tschud-Schürf, that the most ancient Finns mined for copper in primeval times. Yet the Woguls, when the Russians came, no longer knew anything of mining, and Ahlqvist accordingly conjectures (*op. cit.*, p. 63) that they forgot their old copper-mining when trade brought them iron. Finally, the Turko-Tatars also possess a genuine and very old name for copper, *bakar*, *pakar*, Alt. *pakras* (*cf.* Vámbéry, *Primitive Cultur*, p. 174).

If, therefore, all the nations which have surrounded the Indo-Germanic family of speech from the oldest times, were acquainted with copper in the earliest periods of their history, it is *a priori* probable that the Indo-Europeans also, before their dispersion, can hardly have failed to make the acquaintance of this metal. As a matter of fact, the equation Lat. *æs*, Goth. *aiz*, Sans. *áyas*, Zend *ayaṅh*, points directly to this conclusion. As regards form, none of the reasons for suspicion which we have discussed above (*cf.* p. 133, *f.*) can be raised against it. The very difficulty of finding an etymology for this series of words (*cf.* Pictet, *Origines*, i.² p. 190) points to its great antiquity.* On the other hand, its original meaning is a point which requires closer examination. The Italian *aes* (*cf.* Umbr. *ahesnes* = Lat. *ahenus*) stands for both the raw copper as taken from the mine and for the copper artificially combined with tin, which is bronze. The Teutonic words Goth. *aiz* (= χαλκός), Norse *eir*, A.S. *âr* (Eng. *ore*), O.H.G. and M.H.G. *êr*, have the same sense. The English *ore* has extended its meaning the most, and may be used of the ore of every metal, like the German *erz*, O.H.G. *aruz* (see below). The native metal is meant in passages such as Otfried, i. i. 69, *zi nuzze grebit man ouh thar er inti kuphar*, and even in the fifteenth to sixteenth century the Lat. *æs* is glossed not only as *erze* or *eer*, *er*, but also as copper. Even in the year 1561 the Swiss Josua Maaler used *erin* and *küpferin geschirr*, &c., apparently as equivalent. Whereas, then, for Europe we must indubitably start, as regards *æs*, *aiz*, from the meaning "copper, ore," one may be in doubt regarding the Hindu-Persian *ayas*, *ayaṅh*, whether the proper meaning of these words in our oldest records is "copper, bronze," or as, *e.g.*, Justi and Böhtlingh-Roth assume, "iron."

If, to begin with, we look at the archæological facts with regard to ancient India, copper, which frequently occurs in this land to the present day, is found in ancient burial-places in abundance. Rare, but unmistakably traceable, is bronze, which, however, does not exhibit the usual western admixture of copper and tin as 9 : 1, and therefore points to some other source than the west. Again, the Greek authors Nearchos and Cleitarchos (Strabo, p. 718) speak of Hindu χαλκός, which, therefore, is to be referred rather to pure copper than to bronze.† In distribution and antiquity copper is rivalled by iron, in the ore of which, still worked by the natives in the most primitive fashion, India is uncommonly rich (*cf.* R. Andree, *Die Metalle bei den Naturvölkern*, p. 58, *ff.*). No datum for the priority of copper in India can be obtained in this way. We are therefore thrown entirely on tradition and language.

* It is from a root *ai* and the suffix *-es/os* that we must start: Sans. *áy-as*. In its weakest form, *-s*, this suffix is seen in the European Goth. *aiz* (**ai-s-o*) and the Latin **æ-s-is*, *æris* (by the side of which, *ænus* from **ajesno*). Possibly a deep-scale form *î-s* : *ai-s* survives, on which see ch. vii. In the isolated language of the Jeniseians copper is called *ei*, *is*, *ê* (Tomaschek, *Z. f. or. Phil.*, i. 124).

† Otherwise, Pliny, xxxiv. 163: "*India neque æs neque plumbum habet.*" But Ps. Arist., *mirab. ausc.*, 49, p. 834A, also speaks of Hindu bronze.

As a matter of fact both contain manifest indications that in the age of the Vedas *áyas* meant originally, as well as metal in general, not "iron" but "copper." The certain names for "iron" in the Vedic writings, *syámam áyas* (Av., xi. 3, 7, by the side of *lóhitam*, "copper"), or merely *syámá*, literally "dark-blue ore" (*cf.* the later *káláyasá*, "dark-blue," and *kṛshṇáyas*, "dark," *áyas*), bear the stamp of novelty upon them. They are derivations from the original *áyas-as*; which is appended to them, as in Egyptian the determinative of copper, which was first known, is attached to the word for iron (*cf.* Lepsius, *op. cit.*, p. 108). In the Rigveda, too, the flashes of lightning, which are compared to wild boars, are called *áyodaṃshṭra*, "with brazen teeth," while the sun with its evening beams is termed *áyaḥsthúna*, "resting on brazen pillars," both of which can only relate to the colour of copper, not of iron. In addition to these arguments of Zimmer's, the oldest collection of names of metal in the Vedas, which we have already mentioned, in the *Vájasaneyi-saṃhitá*, xviii. 13, *hiraṇyam, áyas, syámam, lóham, sísam, trápu*, seems to me to favour the translation of *áyas* as copper. Certainly Mahidhara's explanation translates *áyas* by *lóham*, which in the older commentators means "copper," and in later times "iron";—*syámam* by *támralóham*, "copper," and *lóham* by *káláyasá*, "iron." But apart from the fact that then iron would be mentioned twice, the explanation is absolutely contradicted by the etymology both of *syámá*, literally "dark-blue," and of *lóhá*, literally "red" (Lat. *raudus*; Fick, *Wörterb.*, i.[3] 201). All difficulties disappear the moment we translate *áyas* as "brass," which in the eight metals of the later Hindus (*ashṭadhátu*) is called *pittalá* or *pítalóhá*. Thus we get gold (and silver), brass, iron, copper, lead, tin.*

Finally, however, by the *ayañh* of the Avesta we have to understand, especially when it is used for making weapons and utensils, not iron but metal, bronze. W. Geiger rightly points out (*Ostiran.*

* In his *Biographies of Words*, Appendix v., "The Third Metal," Max Müller subjects the question of the meaning of the Vedic *áyas* to a thorough discussion. He comes to the conclusion: "All therefore we are justified in stating positively is, that at the time of the Rigveda, besides silver and gold, a third metal was known and named *áyas*; but whether that name referred to either copper or iron, or to metal in general, there is no evidence to show."

Of my explanation of the *Vájasaneyi-saṃhitá* passage given above he says it is "purely conjectural." This does not seem to me quite correct. Rather my explanation rests on the obviously original meaning of the Sans. *syámá*, "black," "dark" (=iron; *cf.* μέλας σίδηρος, Hesiod), and Sans. *lóhá*, "red" (=copper, Lat. *raudus*). If, however, in opposition to the commentator, whom Max Müller himself calls in question as regards his explanation of *lóhá* = "iron," we take *syámá* as "iron," *lóhá* as "copper," what meaning is there left for *áyas* but "bronze?" This meaning, however, suits the passage quoted by Max Müller in *Çatap. Br.*, v. 4. 1. 2: "this is not *áyas* ('bronze') nor gold, for it is *lóhâyasam*" ("copper"); and, indeed, all the more so, as in another passage of the same work (vi. 1. 3. 5), as Max Müller himself points out, *áyas* ("bronze") is pictured as resembling gold. In this last passage ("out of grains of sand made he gravel, wherefore in the end sand became gravel. Out of gravel ore (*áyasa*), wherefore in the end gravel became ore. Out of ore (made he) bronze (*áyas*), wherefore out of ore smelt they bronze;

Cultur, p. 148) that the adjectives attached to *ayaṅh* in the Avesta (*ruocahina*, ἐρυθρός, *zairi*, *zaranya*, αἴθωψ) are suited only to the meaning bronze not iron.

We hope then that we have shown that as regards the equation *áyas-æs*, the European languages have retained the original meaning rather than the Asiatic, in which the old word for copper, metal, obviously under the influence of an earlier acquaintance with the working of iron, gradually assumed the meaning of iron, a common process in the history of languages (*cf.* Finn. *vaski*, "copper": Hung. *vas*, "iron," A.S. *ár*: Eng. *ore*, Sans. *lôhá*, "copper" then "iron," &c.). Yet this by no means brings us to the end of our considerations.

In the European languages *æs-aiz* means copper as well as metal, and thus we are brought to what is perhaps for the historian of primitive culture the most important question in this piece of research: whether the equation alluded to designated in the primeval period native copper or the copper alloyed with tin which is bronze; whether the bronze race of Indo-Europeans avouched by Pictet, and since almost naturalised in science, is a fable or a reality; whether we have to picture the original Indo-Europeans to ourselves spreading as warriors armed with spears, swords, shields, helmets of bronze, bearing the gifts of a higher civilisation, and bringing the non-Aryan peoples with their stone weapons easily to the ground.

I believe that there is nothing in favour of and everything against the assumption that the Indo-European were acquainted with bronze.

To begin with, as we saw, the meaning "black copper" has been faithfully preserved in the equation *áyas-æs* by the side of "bronze;" and it is natural and obvious that the former must have been the original meaning. To this must be added that the names for the tin which is indispensable for the production of bronze are altogether divergent in the Indo-Germanic languages, and—a point which we shall have to deal with more closely in ch. ix.—seem to indicate that this metal only reached the individual peoples at a later time and in the way of traffic and commerce. Now, it would certainly be possible to maintain that the Indo-Europeans were not acquainted with the art of manufacturing bronze indeed, but were acquainted with bronze itself in consequence of the importation of bronze objects from some unknown civilised people or other. Such an assumption certainly cannot be directly refuted; neither, however, can it be made probable on any grounds.

On the other hand, that pure, native copper was really known to the Indo-Europeans appears from another equation: Sans *lôhá*,

out of bronze gold, wherefore well-smelted (*bahudhmâtám*) bronze is almost like gold") Herm. Brunnhofer, *Zur Bronzetechnik aus dem Veda* (*Fernschau*, Aarau, 1886, p. 69), sees a voucher of the most convincing description for *áyas* in the meaning of "bronze."

For the rest, B. R. in the small edition of their dictionary now always give "bronze" the first place for *áyas*.

ong. "copper," (B. R.), Beluchee *rôd*, Pehl. *rôi*, Mod. Pers. *roi* "tin," Armen. *arcar*, "brass" (Hübschmann, *Z. d. D. M. G.*, xxxiv. 133), O.S. *ruda* "*metallum*," Lat. *raudus* O.N. *rauđi*, which goes back to a fundamental Indo-Germanic form **raudho* (: *ερυθρός*), and properly means "red." *

Thus, I conceive, we have good reason for ascribing to *áyas-as* the Indo-Germanic meaning of "copper," and consequently for crediting the Indo-Europeans before their dispersion with an acquaintance with this metal.

How far copper may have been worked in the primitive period for metallurgic purposes, for manufacturing ornaments, implements, and especially weapons, is a question we shall return to in ch. x. (Indo-Germanic Names of Weapons).

From the standpoint of anthropology, however, be it stated here (*cf.* further details in Part iv. ch. xi.) that copper plays an essentially different part in prehistoric culture now from what was assigned to it but a short time ago. Whereas, that is to say, it has been hitherto assumed that in Europe copper periods in the strict sense existed only in certain localities, *e.g.*, Hungary, Ireland (*cf.* Lubbock, *Prehistoric Times*, i. 55), and Spain (Virchow, *Korrespondenzblatt d. D. Ges. f. Anthropologie*, xii. 73), finds of copper in all parts of Europe have recently increased to such an extraordinary extent that the assumption of a special Copper Age, which was in point of time prior to the Bronze Age and immediately subsequent to, or rather contemporary with, the later Stone Age, seems to archæologists now inevitable. On these researches *cf.* M. Much's work, already mentioned, *Die Kupferzeit in Europa und ihr Verhältniss zur Kultur der Indogermanen*, Wien, 1886. Copper was worked for the first time in this age, and not by smithying but by smelting and casting in moulds. Smithying in the proper sense, according to Much, did not make its appearance until the discovery of iron and the invention of bronze. Much sees (p. 175) in the absence of an Indo-Germanic terminology for the smith's craft, which we called attention to in the first edition of this book, a proof of his view that this Copper Age was identical with the primitive Indo-Germanic period; E. H. Meyer, therefore, should not have appealed (*Indog. Mythen*, ii. 682, note) to that work in support of his assertion of the extreme antiquity of smithying amongst the Indo-Europeans.

We shall return, as we have said, to this question; and now once more betake ourselves to the linguistic side of the equation *áyas-as*.

We have seen, that on the whole only four branches of the Indo-Germanic family have preserved the old word for copper,

* The similarity in sound of Indo-Germanic **raudho*, **rudho*, and Sumerian-Accadian name for copper, *urudu*, is remarkable. But what in especial appears to agree with the Sumerian *urudu* is the Basque *urruda*, "copper;" and consequently I will not omit to note that F. Hommel (*Die sumero-akkadische Sprache und ihre Verwandtschaftsverhältnisse*) does in fact maintain a linguistic connection between the Basques and the Sumerians (*p.* 61).

áyas-æs. The reasons why the others lost it can only be conjectured. It is possible that in the gradual spread of the Indo-Europeans their way did not lead them through copper districts, and so both the thing and the word were lost from memory. It is possible also, and perhaps more probable, that the, I might almost say, delicate constitution of *áyas* with its two spirants was particularly exposed to destruction in the rough business of sound-shiftings and phonetic decay. What would become of the oblique cases of the old *áyas* in Greek for example, which has lost both *j* and *s*? It is noteworthy, however, and also indicative of the high antiquity of the equation, that those branches of the Indo-Germanic family of speech which have retained the old word, have also adhered throughout to the neuter gender for the names of the metals (*cf.* ch. xi.), which has only been departed from by those languages that have displaced *áyas* by more recent expressions. The reason of this obviously is that in naming the metals the word *áyas*, "copper," was originally started from, and the expressions used were: yellow *áyas* (=gold), whitish *áyas* (=silver), bluish *áyas* (=iron).

If, therefore, we have decided on good grounds in favour of the view that the manufacture and use of bronze was not known to the Indo-Europeans before their dispersion, the question at once arises for the historian of primitive culture, whether it is not possible by means of Comparative Philology to ascertain the starting-point from which, and the route by which the knowledge of bronze spread amongst the Indo-Germanic tribes.

Unfortunately in this question language is an imperfect guide. There is no Phenician, Etruscan, or other word for bronze which has taken its way to the north or west of Europe, and which therefore might serve as our guiding star. When the Indo-Europeans became acquainted with the new metal, whether with its manufacture or with it as a manufactured product, they called it, like the Egyptians (*χomt*) and Semites (Hebr. *n(ĕ)choshet*), by the same name as they already gave to copper (*cf.* further, ch. viii.).

The only exception, a very remarkable one, is afforded by Sumero-Accadian. Here, in addition to the *urudu* already mentioned, there exists a special term for bronze, *zabar*. Further, in a bilingual Magian hymn to the fire-god (*Gibil*) there is express mention of the preparation of bronze, *i.e.*, of the mixing of copper and tin. Since this is the absolutely oldest known passage treating of the manufacture of bronze, I will give it here (from F. Lenormant, *Les noms de l'airain et du cuivre*, Transactions of the Society of Biblical Archæology, vi. p. 346; *cf.* F. Hommel, *Die vorsemitischen Culturen*, pp. 277, 409). It runs in Accadian:—

Urudu anna χiχibi zæ men
Le cuivre l'étain mélangeur + leur tu es;

in Assyrian:—

Sa eri u anaki muballilsunu atta
Du cuivre et de l'étain leur melanger (c'est) toi.

This suggests the conjecture that we here find ourselves really

very near the starting point of the bronze industry. The necessary tin may have been obtained in the way of traffic from the mines of the Paropanisos, where, according to Strabo (p. 724), tin was obtained, as is confirmed by modern research (see *Baer Archiv f. Anthrop.*, ix. 265). Again, the Sumerian term for bronze is genuine, and means (=*nâmâru*) "shining a fiery red" (P. Jensen, *Z. f. Assyriologie*, i. 255). Hence, at a very early time, *tabar* spread to the Semitic languages (Assyr. *siparru*, Arab. *zifr*).

But even in Egypt the manufacture of bronze can scarcely have been native. Not only, as we have already remarked, are copper and bronze on ancient Egyptian monuments brought especially by Asiatic peoples, by the Assyrians (the *Rotennu*) in particular, but it is in the highest degree remarkable that as yet no special name for tin has been discovered in ancient Egypt (*cf.* Lepsius, *op. cit.*, p. 114).

Now, we must turn our attention to the luxuriant terminology which grew up by the side of and subsequent to *áyas* in the Indo-Germanic languages for bronze and copper, a pair of metals which as we have seen are scarcely separable. If, to begin with, we look to see in what way the Asiatic Indo-Europeans have replaced *áyas* after its transference to another sphere of meaning, we find that the Sanskrit names for copper and bronze (*cf.* Pott, *Etym. Forsch.*, ii. p. 414, and Narahari's *Râjanighaṇṭu*, ed. Garbe, p. 55, *f.*) have no connection with words in the other languages. The most common of the Sanskrit names for copper is *tâmra*, *tâmraka*, "the dark metal;" the expression *mlecchamukha*, "of the colour of barbarians' faces," is also interesting.

On the other hand, the Iranian dialects almost uniformly indicate loans from abroad, which sometimes partially extend over very wide linguistic areas.

The East Finnic, Wotj. *ìrgon*, Soswa-Wogul *ärgin*, Tscher. *virgène*, penetrated from the north into Ossetic (*arkhoy*, *arkhüy*; *cf.* above, p. 181, as to the Ossetic word for silver). From the north also comes N. Pers. *birinj*, Kurd *birinj*, *pirinjok*, which probably belong to the Armen. *plindz* = χαλκός. This itself appears to be connected with Georgian *spilendsi*, "copper;" *Asia Polyglotta*², p. 117 (*cf.* Armen. *oski*, "gold": Georg. *okro*).* Perhaps it is to Modern Slav influence only that are due: Kurd *mys*, Mazender *mis*, *mers*, N. Pers. *mys*, *mis* (cf. *Z. d. M. G.*, xxv. p. 391), Buchar *miss*, Kirgh *moes*; *cf.* O.S. *mědi*, Pol. *miedź*, Upper Serb. *mjedź*, &c.

The Afghan *bagir*, Awaric (in the Caucasus) *bach*, Alban. *bakûr*, N. G. μπακάρι, Serb. *bakar*, Bulg. *bakŭr*, are of Turkish origin.

* F. Justi (*Dictionnaire Kurde-Français*, p. 46) compares the Kurd words. P. de Lagarde (*Armen. Stud.*, p. 129) compares also the Armen. *plindz* to Zend *bereǰya*. The meaning, however, of *bereǰya*, which only occurs once in the Avesta (*aonyat haca parôberejyât*, Vd. 8. 254), is wholly uncertain. Justi translates: "'Away with tin, which is amalgamated with copper." Spiegel similarly. Geldner (*K. Z.*, xxv. p. 578): "From the fire apparatus of a white-smith." Geiger (*Ostiran. Cultur*, p. 149) finally takes *aonya parôberejya* as a peculiar kind of tin as contrasted with *aonya takhairya*. Pott (*Zeitschrift f. d. Kunde des M.*, iv. p. 264) actually compares the European words for bronze (*bronce*, &c.) with the Kurd words (*birinj*, &c.).

The Arab. *zifr* (*cf.* above, p. 193) travelled into Kurdic (*sipir, sifr*; *J. of the American Or. Soc.*, x. p. 151) from the Semitic south-west.

From the relations of Iran, which are late in time and of little interest, let us turn to Europe.

The oldest name for bronze and copper on the Balkan Peninsula is that current in Homer's time, χαλκός. With regard to this word, we may assert to begin with, that as compared with σίδηρος, "iron," it is obviously a much older element of the Greek language; for, whereas, even in Homeric times there exists a considerable number of living derivatives from the stem χαλκο-, such as χάλκεος, χάλκειος, χαλκεύς, χαλκεύω, χαλκεών, χαλκήιος, χαλκήρης, on the other side, against this luxuriant growth, σίδηρος, σιδήρεος stands bare and isolated, and it is only at a later date that this stem also begins to put forth buds.

As regards the formation of names of persons, the relation of χαλκο- : σιδηρο- may be compared with that of χρυσο- : ἀργυρο-, that is to say σιδηρο-, "iron," is practically never used in giving names. In the north of Europe, strange to say, it is precisely the opposite state of things that prevails. Teutonic proper names are indeed formed with *îsen*, "iron" (and with *gold*), but not with *êr*, "copper," (or *silber*). In Slavonic proper names also the only metals used are *zlato*, "gold," *strébro*, "silver" (not commonly used for this purpose by the other nations), and *gvozdije*, "iron," copper not occurring (*cf.* G. Krek, *Einleitung in die slav. Litteraturgeschichte*, p. 15).

Finally, amongst the Celts I am acquainted only with names formed with *haiarn*, "iron," such as *Haiarn, Hoiarn, Hoiarnscoet, Cathoiarn, Hælhoiarn*, &c. (Zeuss, *G. C.*, p. 106).

To these proofs of the priority * of χαλκός to σίδηρος in Greece is to be added the circumstance that the most ancient name for the smith (χαλκεύς) and the smithy (χαλκεών, χαλκήιος δόλος) is derived from copper, or rather bronze, and not from iron; and, finally, the fact that we can trace in the Homeric poems themselves the gradual spread of σίδηρος. According to Beloch's calculations in the *Rivista di filologia*, ii. (1873), 49 *ff.*, χαλκός is mentioned in the *Iliad* 279 ×, σίδηρος only 23 ×, the majority of which occur in the late lay of Patroclus' funeral games. The ratio is different in the more recent *Odyssey*, in which χαλκός is mentioned 80 ×, iron 29 ×. It also deserves to be noticed that in the epic iron is much more frequently employed in the production of implements than of weapons (Helbig, *Homerisches Epos*², p. 330, *ff.*).

Thus, language confirms for Greece itself Hesiod's ancient tradition (*cf.* Lucret. v. 1282), according to which the men of the third age:—

χαλκῷ δ' εἰργάζοντο· μέλας δ' οὐκ ἔσκε σίδηρος.

The most ancient meaning of χαλκός, "copper," can still be plainly discerned in passages such as *Od.*, i. 182, in which the

* *Cf.* the exhaustive discussion of this subject in Blümner, *Terminologie u. Technologie*, iv. 38, *ff.*

Taphian king Mentes sails to (the Cyprian) Temese to barter χαλκός for σίδηρος. Again, when χαλκός is mentioned along with gold and other possessions in the treasure chambers of the king the native copper is obviously meant, as also when it is used as a medium of exchange (*Il.*, vii. 472). Some scholars, such as Gladstone (*Homer and his Age*), Buchholz, and others, decline to proceed beyond this meaning, and assign the Homeric Age to a pure copper period. The latter (*Die homer. Realien*, I. 2. p. 323) appeals to the epithet ἐρυθρός which is once attached to χαλκός (*Il.*, ix. 365). It is clear though, from what has been said, that in this place χαλκός means copper, while the other and more usual epithets of χαλκός, αἴθων, "glittering," φαεινός "glancing," νώροψ, "dazzling," point much more to bronze than to copper. With this it is in accordance that the most ancient finds on Greek soil—Mycenæ, Orchomenos, Tiryns—exhibit exclusively bronze and no iron, which on the one hand makes "bronze" the probable main meaning of χαλκός in Homeric times, and on the other speaks against the early use of iron in Greece. It is, therefore, a statement wholly without foundation, when Schömann (*Greek Antiquities*, i.[4] 85) states that χαλκός, used of weapons of offence, always means "iron."

For the rest, the ancients, if we are to believe certain somewhat late traditions, understood the art of hardening copper, something like iron.* According to Pausanias, ii. 3, 3., in Corinth the Κορίνθιος χαλκός was plunged red hot (διάπυρος καὶ θερμός) into the beautiful stream Πειρήνη with this object. Homer, though, makes no mention of this art. The passage in *Od.*, ix. 391, where a smith puts an arrow in cold water, refers to iron.

Nothing quite certain can be made out about the origin of the word χαλκός. Its connection with Sans. *hrâdu*, *hlâdu* (Curtius, *Grundz.*[5], p. 197), seems to me altogether improbable. Not only is the change of meaning wholly without parallel, as far as my knowledge goes, but the meaning of the Sanskrit word which only occurs once, when it is accompanied by *jatuka*, "*lac*," and is translated by *trâpu*, "tin," stands so very much by itself that it is impossible to utilise it; and Blümner, *loc. cit.*, p. 56, note 3, should not have used this etymology in support of the erroneous view, as I believe it, that χαλκός meant "bronze" from the beginning.

There is more probability in identifying, as does not only Curtius, but also other distinguished students of language such as A. Fick (*Vergl. Wörterb.*, i.[3] p. 578) and J. Schmidt (*Zur Geschichte des indog. Voc.*, ii. pp. 67 and 208), the Greek word, through a stem-form χαλχο-, with the Lithu-Slavonic names of iron, Lith. *geležis*,

* *Cf.* Proclus on the words of Hesiod quoted: Δηλοῖ ὅτι τῶν σωμάτων τὴν ῥώμην ἤσκουν οἱ ἐν τούτῳ τῷ γένει τῶν δ' ἄλλων ἀμελοῦντες, περὶ τὴν τῶν ὅπλων κατασκευὴν διέτριβον καὶ τῷ χαλκῷ πρὸς τοῦτο ἐχρῶντο, ὡς τῷ σιδήρῳ πρὸς γεωργίαν, διά τινος βαφῆς τὸν χαλκὸν στέρροποιοῦντες, ὄντα φύσει φαλακόν· ἐκλιπούσης δὲ τῆς βαφῆς ἐπὶ τὴν τοῦ σιδήρου καὶ ἐν τοῖς πολέμοις χρῆσιν ἐλθεῖν. *Cf.* Rossignol, *Les Métaux dans l'antiquité*, "Sur la trempe que les anciens donnerent au cuivre," pp. 237–42, and Schliemann's *Ilios*, pp. 537, 814. To harden copper like steel is thought by modern chemists absolutely inconceivable (Blümner, *loc. cit.*, p. 51).

Pruss. *gelso*, O.Z. *želězo*. If this is correct, then the languages which have all lost the ancient *ayas*, would have preserved another ancient name for copper, for the original meaning of the equation would be the same as in Greek; *cf.* above, p. 236, note.

Undoubtedly it was from the stores of Asia that copper was mainly brought or fetched to Greece, which is poor in the metal. There was no hesitation even in Homer's time to undertake the dangerous voyage to Temese, abounding in copper (πολυχαλκος), in the metalliferous island of Cyprus, which was covered with Semitic colonies (Temese = Sem. *t-mis*, "smelting-house;" Kiepert, *op. cit.*, p. 134). However, besides the mines in this island, the copper-mines of the Caucasian district (Ezekiel xxvii. 13*), Sinai, Lebanon, the Troad (Strabo, c. 606), &c., were open to the Phenicians. On the whole, therefore, it seems to me most probable that χαλκός was an ancient name for copper, which the Greeks brought with them to their new home. Here made acquainted, through Phenician commerce, first with bronze articles, and then with the mode of preparing bronze, they transferred the ancient word for copper to the new mixture of metals: χαλκός like Lat. *æs* now meant both "copper" and "bronze." Closely connected with the name of the metal apparently is the town, mentioned by Homer, of Chalcis in Eubœa, a name which according to Pliny (*Hist. Nat.*, iv. 12. 21) once designated the whole island. Indeed, according to later tradition, Chalcis must have been a centre of mining and metallurgic industry (*cf.* Büchholz, *Die homerischen Realien*, i. 2, p. 322). In spite of this, however, Kiepert (*Lehrbuch der alten Geographie*, p. 255) is of opinion that the town name Chalcis, "inasmuch as the plain and the chalk cliffs in the neighbourhood contain no metal," is rather to be derived from a leading article of export from Eubœa, the purple fish κάλχη, χάλχη, than from χαλκός, "copper."

Before leaving the Greek χαλκός, which has perpetuated itself in the N.G. χαλκός, χάλκωμα, Cyp. χάρκωμαν (G. Meyer, *Griech. Grammatik*, p. 154), and thence in the Gipsy *charkom* (*cf.* Pott, *Zigeuner*, ii. p. 168), we must mention a very remarkable compound of χαλκός, the Old Greek ὀρείχαλκος.

This variety of metal is mentioned for the first time in Greek literature in the Homeric hymn to Venus (vi. 9), where artificial flowers of ὀρείχαλκος and precious gold are spoken of. A second passage occurs in the *Shield of Hercules*, which goes by the name of Hesiod (v. 122):—

κνημῖδας ὀρειχάλκειο φαεινοῦ,
Ἡφαίστου κλυτὰ δῶρα, περὶ κνημῇσιν ἔθηκεν.

What did the ancient poets conceive under this word, which

* "Javan, Tubal (Tibarenes on the Pontus), and Meshech (Moschi, *ib.*), they were thy traffickers: they traded the persons of men and vessels of brass in thy market." Javan, according to Gesenius (*Hebr. Handwörterbuch*[6], p. 352[2]), means a town in Arabia; where, according to Lenormant (*Transactions of the Society of Biblical Arch.*, vi. p. 347, *f.*) *Milan* also, the source from which the Accado-Assyrian demand for copper was supplied, was situate.

etymologically means nothing but mountain copper.* Whereas the verses of Hesiod, which are obviously a reminiscence of Homer (*Il.*, xix. 613) :—

τεύξε δέ οἱ κνημῖδας ἑανοῦ κασσιτέροιο,

suggest that ὀρείχαλκος = κασσίτερος ; on the other hand, in the Homeric hymn a metal not far removed from gold seems to be meant. This, again, is decidedly the sense of ὀρείχαλκος in the third oldest passage in Greek literature in which it is mentioned, in the *Critias* of Plato, who mentions it several times in the description of his fabulous state of Atlantis. The metal, which now is only known by name, but then was something more than a mere name (τὸ νῦν ὀνομαζόμενον μόνον, τότε δὲ πλέον ὀνόματος), occurs in the island in various places. It is the most highly prized of the metals next to gold (113). The wall of the Acropolis is covered with it (116). In the interior of the temple the ceiling is of ivory with decorations of gold and ὀρείχαλκος ; walls, pillars, and floor were also covered with it (116). The use here made of ὀρείχαλκος reminds us in a striking way of the employment of electrum in the palace of Menelaus (*cf.* above, p. 185), and this suggests the supposition that if the ancients really did, at any rate originally, associate a single idea with the word, which seems probable, they had their eye, in the oldest periods of civilisation, on the gold-silver, so much employed, to which they may have given the name "copper (= 'metal') of the mountain," in the same way as the Egyptians called gold, not relieved of its percentage of silver, *nub en set*, "mountain gold." Indeed, ὀρείχαλκος is once interpreted in Suidas as εἶδος ἠλέκτρου, which, however, must not be made too much of. Anyhow, this explanation seems to me less forced than that given by Rossignol in his work *Les Métaux dans l'antiquité*, p. 220.* The more electrum fell out of use in Greece, the more indistinct must the meaning of ὀρείχαλκος have become. In later Greece it was employed of brass (χαλκὸς λευκός),† which in its appearance is not unlike gold-silver, and which appears to have been originally obtained directly from mines in which copper occurred mixed with zinc, and only later to have been produced by an artificial admixture. According to Lepsius (*Zeitschrift für ägypt. Sprache und Alterth.*, x. p. 116, *f.*), χαλκολίβανος in the Septuagint also would mean "copper of Lebanon" = "brass."

At a very early time the Greek ὀρείχαλκος became known to the Romans, whose most ancient poets, misled by the popular

* "Cependant les poètes se rappelant les services nombreux que le cuivre avait rendus et l'estime singulière où l'avaient d'abord tenu les hommes, idealisèrent ce metal et l'appelerent orichalque ou cuivre de montagne par excellence de ὄρος et de χαλκός." Rossignol distinguishes three stages in the use of the word ὀρείχαλκος : (1) âge mythique de l'orichalque ; (2) âge réel de l'orichalque, (*a*) le cuivre pur, (*b*) l'alliage du cuivre et du zinc, (*c*) l'alliage du cuivre et de l'étain ; (3) âge latin de l'orichalque (*aurichalcum*).

† *Cf.* Strabo, c. 610 : ἔστι δὲ λίθος περὶ τὰ Ἀνδεῖρα, ὃς καόμενος σίδηρος γίνεται· εἶτα μετὰ γῆς τινος καμινθεὺς ἀποστάζει ψευδάργυρον (zinc), ἢ προσλαβοῦσα χαλκὸν τὸ καλούμενον γίνεται κρᾶμα ὅτινες ὀρείχαλκον καλοῦσι (κρᾶμα, ὁ κεκραμένος χαλκός = brass). In the *Periplus* (§ 6), ὀρείχαλκος is exported to Africa : ᾧ χρῶνται πρὸς κόσμον καὶ εἰς συγκοπὴν ἀντὶ νομίσματος.

etymology *aurichalcum* : *aurum*, saw in it a purely fabulous metal. Subsequently *aurichalcum*, *orichalcum* came to mean "brass" here also.

If we now turn from Greece to the northern districts of the Indo-Germanic peoples, from which as far as the sea the old *áyas-æs* disappeared without leaving a trace behind, we have first to regret that no genuine name for copper has been preserved in Albanian. Besides the *bákŭr*, *bakŭr* already mentioned, and the Latin *kjípreɛa*, "bronze," there is also to be found here the expression *tutś* or *tunš* (τουνσ̈-ι, Serv. *tuč*, "bell-metal, brass, bronze," Bulg. *tučŭ*, "bronze"), which is of Turkish origin.*

The name for copper and bronze, which is the same in nearly all the Slav languages, is in old Slavonic *mědĭ* (*cf.* above, p. 157), and cannot, as far as I know, be traced to any Slavonic root.

It seems to me most probable that O.S. *mědĭ*, together with Teutonic *ge-smîde*, *smîda* (*cf.* above, p. 157), belongs to the Indo-Germanic root *smei*, *smi*, by the side of *mei*, *mi*, which recurs in the G. σμί-λη, "cutting-tool," σμῖ-λος by the side of μῖ-λος, "yew-tree" ("suited for cutting"), and consequently properly meant "to artificially prepare." The O.S. *mědĭ* would then in the primitive period have meant something like "copper trinkets," and would then come to be employed of the metal itself, in the same way as the East Finnic name for iron has been obtained from the Iranian name for knife (*cf.* ch. vii.).

As regards archæology, the metallurgy of the Slavonic peoples still requires closer investigation. Wocel (*cf.* above, p. 60) assumed that east of the Carpathians, though there were abundant finds of iron, copper and bronze were not forthcoming, and that consequently in the region between the Weichsel, Dnieper, and the Don, an Iron Age succeeded immediately on the Stone Age. But the recent discovery of abundant finds of copper in the district mentioned (*cf.* Krek, *Einleitung*², p. 103, *ff.*) has shaken this view. Nor do the Black Sea steppes present any clear picture in the records of antiquity. According to Hdt., i. 215, the Massagetæ possessed bronze but no iron; of the Pontic Scyths the historian says (iv. 71): ἀργύρῳ δὲ οὐδὲν οὐδὲ χαλκῷ χρέονται. Nevertheless, the Skoloti were found in possession of arrow-heads of χαλκός (iv. 81). *Cf.* further, Tomaschek, *Kritik der ältesten N. achrichten über den scythischen Norden*, Wien, 1888, p. 15. The Slavonic term for copper, in contrast to the term for iron (*cf.* above, p. 195) which is common to Slavs, Lithuanians, and Prussians, is not shared by the Baltic languages, whose words for copper and bronze, *wārias* (*cf.* also *szwitwaris*, *skaistwaris*, by the side of *misingi*, "brass"), Pruss. *wargian*, seem quite isolated.

Nevertheless here, too, it is perhaps possible to establish a connection. We have already come across the genius of metals, *kshathra vairya*, in the Avesta, a name which is frequently employed to

* Alb. ζιλε, which J. Grimm, *Geschichte der deutschen Sprache*, translates on p. 9 as copper (*erz*), on p. 11 as iron, is obviously nothing more than ζίλjε-ja, "molten bells," in Hahn, *Alb. Stud.*, p. 37 (of the lexicon).

designate the metal in clamps, arrows, knives, &c. (*cf.* Justi, *Handw*, p. 93). Perhaps, as is shown by Yasht., 4. 4, *haca starâi vairyâi*, "of the metal dagger" (according to Justi's translation *), *vairya* is used without the addition of *kshathra* in the sense of *metallicus*, *æneus*. Now Persian *vairya*, however, would correspond satisfactorily to Lith. *wârias*.

Like the whole of the east of Europe, the Celtic west has lost every trace, except one of which we shall have to speak in the next chapter, of the original name for copper. It has been replaced by a common Celtic word Ir. *umæ*, *uim* (cf. *umaide*, *umamail* "*æreus*," *umhaidhe*, χαλκεύς), O. Cymr. *emed*, N. Cymr. *efydd*; *cf.* Stokes, *Irish Glosses*, p. 83, which originally designated pure copper, as is shown by the compound *créd* (tin) + *umæ* for bronze. Unfortunately, I have not been able to find any datum for ascertaining the origin of this word. Copper was to be found in Gaul itself, though it was by the Romans it was worked. But the proximity of Spain, with its wealth of copper, would amply supply the Celtic tribes with copper. Of Britain, Cæsar, *De B. G.*, v. 12, expressly says: *ære utuntur importato* (Blümner, *loc. cit.*, p. 65, *f.*).

Finally, both in Latin and in the Teutonic languages, when both pure and alloyed copper had come to be comprised under the ancient *áyas-æs*, new and more precise expressions to distinguish between copper and bronze became necessary. Here, again, the island from which copper was obtained both for Egypt and for Homeric Greece, Cyprus,† is here again important. Cyprus, an island rich in copper (*ærosa*, πολύχαλκος), received its name, owing to the cypresses in which it abounds (*gopher* = κυπάρισσος), from the Phenicians who first exploited the metallic wealth of its mountains. In the year 57 B.C. it came into the possession of the Romans, and the fine copper obtained from its mines (*æs Cyprium*, χαλκός Κύπριος) soon gave its name to the same metal in other lands. In the course of time the Lat. *æs Cyprium*, or rather the popular form *cuprum* (which first occurs in Spartianus, *Hist. Aug.*, i. p. 725), *cupreum*, *cyprinum*, spread to almost every point of the compass. The word first found its way into the Romance languages, where however it has survived in French alone (*cuivre* = *cupreum*). The other Romance languages use the Latin *æramen*, *æramentum*, "copper ware" (like Greek χάλκωμα; *cf.* above, p. 196). So, too, It. *rame*, Wal. *arame* (but *alame*, "brass" ‡), Sp. *arambre*, *alambre* (whence, also, Basque *alamerea* by the side of the probably genuine *urraida*), Pr. *aram*, Fr. *airain*. East of Italy the word *cuprum* reappears as we saw in Alb. κjίπρε-α, "copper;" *cf.* also N. Serv. *kupor*, U. Serv. *kopòr*. The Latin word, however, has been most

* Darmesteter and De Harlez, as Professor Wilhelm reminds me, translate the passage quite differently ("from the witful sinner").

† *Cf.* on the finds of copper in Cyprus, *Cesnola Cypern*, and M. Much, *loc. cit.*, p. 32, *ff.*

‡ The other Romance names for brass, Fr. *laiton*, Ital. *ottone*, Span. *laton*, are, according to F. Diez (*Etym. W. d. rom. Spr.*[4], p. 230), to be referred to Rom. (It.) *latta*, "white metal" (properly *plata*).

thoroughly appropriated by the Teutonic languages. It runs: O.H.G. *chuphar*, M.H.G. *kupfer*, *kopfer*, Eng. *copper*, Dan. *kobber*, Swed. *koppar*, O.N. *koparr*. From the Teutonic north it found its way on the one hand into Irish (*copar*) and Cornish (*cober*; Zeuss, *G. C.*², p. 1069), on the other into Finnic (*kupari*), Lapponic (*kuoppar*), Esthonian (*kubar-wask*). Lapponic *air*, *airra* is O.N. *eir*, Goth. *aiz*.

On the other hand, there is much more uncertainty as to the original provenance of the word which at the present day serves to designate bronze throughout most of Europe, our and German *bronze*, Fr. *bronze*, Ital. and Span. *bronce*, N. Gr. μπροῦνζος (M.G. *cf.* ἔχει καὶ δύο πόρτας προύτζινες), O.S. *brozenŭ* "*fuscus*," N.S. *brunc*, Serv. and Russ. *bronza*, Alb. *brunze*, &c. In its oldest (Middle Latin) form it is *bronzium* (*æs*, *cuprum*; *bronzina tormentum bellicum*; *bronzinum vas*; *cf.* Du Cange, *Gloss. Mediæ et Infimæ Latinitatis*), and according to some is derived from the originally German adjective *bruno*, "brown," *brunizzo*, *bruniccio* (*brunitius*), and therefore means "the brown metal," while according to others it comes from the Middle Latin *obryzum* (*obryzum aurum* = χρυσίον ὄβρυζον, "gold which has stood the test of fire," *obrussa* the "fire test of gold," which occurs even in Cicero), designating bronze after its colour which resembles that of gold;* *cf.* Diez, *Etym. d. rom. Spr.*, i.⁴ p. 69.

A new explanation has been briefly set forth by Berthelot, *Sur le nom du bronze chez les alchimistes grecs* (*Revue Archéologique*, 1888, p. 294). As the oldest form of the word he endeavours to establish a Mid. G. βρουτήσιον in alchemistic works. This corresponds to a Lat. *æs Brundisium*; since there must have been celebrated manufactories of bronze (Pliny, *Hist. Nat.*, xxxiii. 9. 45; xxxiv. 17. 40).

Besides the expressions already discussed, there crops out in the High German linguistic area, and only in that area, as early as the Old High German epoch, another expression for bronze: O.H.G *aruz*, *aruzi*, *erezi*, Modern German *erz*, which recurs in proper names such as *Aruzapah*, *Arizperc*, *Arizgrefti*, *Arizgruoba*, and also has found its way into non-Indo-Germanic languages, such as Esth. *ärts*, Hung. *erez*. Unfortunately, its origin is entirely wrapped in mystery; anyhow, it has nothing to do with *aiz*, *êr*. Nor does it wholly coincide in meaning with it; for, whereas, of the two adjectives, M.H.G. *êrîn* and *erzîn*, the former alone is applied to copper or bronze (and therefore = Lat. *æneus*, *æreus*, *aheneus*), *erzîn*, N.H.G. *erzen* has the perfectly general meaning *metallicus*.†

Finally, the German *messing*, which makes its appearance from

* "The Romance word must have been coined in Italy, where the initial *o* would easily be lost and the *n* might easily be introduced before the dental;" *cf.* Diez, *loc. cit.*

† In Grimm's *Deutschem Wörterb.*, under "*Erz*" and "*Kupfer*," there is a string of phonetically impossible combinations to explain the etymology of the German *erz*. Again, the comparison of Lat. *raudus*, *rudus*, in which Weigand (*Deutsches Wörterb.*) agrees, is impossible.

the twelfth century, O.N. *messing*, fem., A.S. *mæstling*, like the Pol. *mosiądz*, O. Serb. *mosazĭ*, N. Serv. *mesnik*, &c., is a loan-word from the Latin *massa*, "mass, mass of metal;" *cf.* also M.H.G. *messe*, neut. and fem., Swiss *mesch*, "brass." At any rate, this derivation is more probable than the one given by Kopp (*Geschichte der Chemie*, iv. p. 113), according to whom the Teutonic word originally meant "Mossynic copper," in accordance with a passage of Pseudo-Aristotle (*De Mirabilibus Auscultationibus*): *φασὶ τὸν Μοσσύνοικον χαλκὸν λαμπρότατον καὶ λευκότατον εἶναι, οὐ παραμιγνυμένου αὐτῷ κασσιτέρου ἀλλὰ γῆς τινος* (spelter, zinc, ore, &c.) *γινομένης συγκαομένης αὐτῷ*.

For a summary of the results of this discussion, *cf.* chapter viii.

CHAPTER VII.

IRON.

Iron, hard to work (*πολύκμητος σίδηρος*), which at the present day has conquered the world, belongs to the most widely distributed of the metals, and possesses the peculiarity that, as with the exception of meteoric iron, it only occurs in a mineralised form, and is therefore not very conspicuous, so even when it has been smelted and wrought by the hand of man, it offers less resistance to the tooth of time than do the other metals. Prehistoric archæology therefore often finds itself in the difficulty of not being able to decide whether the absence of iron from a given stage of culture is to be ascribed to man's ignorance of it or to the destructive power of time. Archæology is therefore thrown back upon the evidence of history and language more in the case of iron than of any other metal. This evidence shows that the use of the metal in the civilised countries of the east goes back, if not beyond, at least as far as the beginnings of history. Lepsius, in his often quoted treatise, has traced iron under the name of *men* in the oldest Egyptian inscriptions. Recognisable in pictures by its bluish tint, it is employed in the earliest times for vessels and weapons. Nevertheless here, too, the priority of copper is rendered probable by the circumstance already alluded to, that the word for iron has the sign of copper as its determinative (*cf.* Lepsius, *op. cit.*, p. 108). From Egypt, and afterwards from the trading factories of the Phenicians, Greeks, and Romans on the Red Sea, there probably spread articles of iron and a primitive mode of iron-working, in the direction from north-east to south, into the interior of Africa, thus making it seem as though the blacks had independently discovered and worked iron (*cf.* Andree, *Die Metalle bei den Naturvölkern*, p. 3, *ff.*). In any case the Iron Age was immediately consequent on the Stone Age in Africa: the other metals are in part named from the standpoint of iron (above, p. 154, note).

The Semitic languages possess a common expression for iron: Hebr. *bar(ĕ)zĕl*, Syr. *parzel*, Assyr. *parzillu* (Arab. *firzil*, "iron point"), which indicates their primeval acquaintance with this metal (Orig. Semit. *parzillu*). In the Old Testament, too, iron is frequently employed for vessels, talents (1 Chron. xxiii. 14; xxx. 7), for nails and door-plates, and also weapons (1 Samuel xvii. 7), although it is noteworthy that bronze is mentioned much more frequently than

iron (in the first four books of the Pentateuch the proportion is 83 : 4). In the same series as the Semitic names for iron is the Sumerian *barzu*, as to whose exact relation to the Semitic word, however, I have no views (*cf.* F. Hommel, *Die sorsem. Kulturen*, p. 403).

If we now turn to the Indo-Germanic peoples, we find that even in hieroglyphic inscriptions the country of *Pers*, *i.e.*, Persia, is termed a principal place for the export of iron (Lepsius, *loc. cit.*, p. 104). We can, therefore, all the more readily understand how the Zend *ayanh*, inherited from the primeval Indo-Germanic period, gradually came to stand for iron, which soon came to dominate their metallurgy. That iron was at any rate known to the Iranian tribes at a relatively early time is shown by a name for it which is common to most of their dialects, even to the remotest of them, Ossetic: Afghân *śepanah*, *śpînah*, Osset. *afseināg*, *awseināg*, Pamir D. *śin*, *śpin*, &c. (*cf.* W. Tomaschek, *Centralas. Stud.*, ii. p. 70), Kurd *hâsin*, *awsin* (Justi-Jaba, *Wörterbuch*, p. 138; Hübschmann, *Osset. Spr.*, p. 25). This stock of words has not yet been explained.*

For the rest, the Persians are described by Herodotus (vi. 61 and 84) throughout as armed with iron and bronze weapons. The kindred Scyths, also in the time of Herodotus, had made the acquaintance of iron. The historian relates (iv. 62) that in the cult of Ares an iron sabre (*σίδηρος ἀκινάκης*) was worshipped as an emblem of the god, and the use of this metal in the worship of the gods indicates a very ancient acquaintance with iron, while our author expressly denies copper (bronze) to the Scythians (iv. 71); *cf.* above, p. 198.

The Armenian word for iron, *erkath*, formed on the analogy of *artsath*, "silver," like the Armenian name for gold and copper, comes from the Caucasian languages (Georg. *rkina*, *kina*, "iron," Las. *rk'ina*, "knife;" *Asia Polyglotta*[2], pp. 113, 122).

Special words for hardened iron (steel) seem to have been tolerably late in making their appearance in Asia Minor, though one of them has come to be distributed over a tremendous area: N. Pers. *pûlâd*, Syr. *p-l-d.* (Paul de Lagarde, *Ges. Abh.*, p. 75), Kurd *pila*, *pola*, *pulad*, &c. (Justi, *Dictionnaire Kurde-Français*, p. 84), Pehlevi *pôlâvat*, Armen. *polovat* (Lagarde, *Armen. Stud.*, p. 130), Turk. *pala*, Russ. *bulatŭ*, Lesser Russ. *bulat* (Miklosich, *Fremdw.*, s.v.), Mizdżeghic *polad*, *bolât*, Mong. *bolot*, *bulât*, *burât* (Klaproth, *Asia Polyglotta*[2], p. 282, *Sprachatl.*, v.; A. Pott, *Zeitschrift f. d. K. d. M.*, p. 262). But where and wherein are we to look for the origin of this series of words?

* Hübschmann (*K. Z.*, xxiv. 392) thinks of a Mod. Pers. *spîn*, "white": Zend *spaêta*; though I do not know of any other case in which a name for iron is derived from an adjective "white."

Justi (*Wörterb.*, p. 139) compares with the words mentioned Zend *hâosaŋha*, which he (*Handw.*, s.v.), Geldner (*K. Z.*, xxv. 579), and Geiger (*Ostiran. Kultur*, p. 148) translate as "copper," but Spiegel (*Avestâ*, trans. *Vend.* viii. 254—viii. 90) as "iron." This is impossible phonetically.

In Modern Persian iron is *âhen*, which may be explained from **ayasana*, or else belongs to Beloochee *âsin*, Pehl. אסן West, *Glossary*, p. 27). Spiegel (*Arische Periode*, p. 35) thinks of its coming from *asan*, "stone" (*cf.* Sans. *açman*, above, p. 190, note, "stone-work").

The Ossetic name for steel, also, is particularly interesting, inasmuch as it again is borrowed from the Permian languages (Wotj. *anda*, Syrj. *jendon*), and also recurs in the Caucasus (Mizdzeghic *ändun*; Klaproth, *Sprachatl.*, v.). For the third time, therefore, we have come across East Finnic words in Ossetic, that is to say, the names for silver (*ärvist*), copper (*arkhay*), steel (*andun*), to which we shall subsequently (ch. ix.) have to add that of lead (*tälä*), so that the Ossetes inherited from the period when they were still united with their Iranian brothers only terms for gold (*sughsarme*) and iron (*afseinäg*). The relations, however, between the culture of the Ossetes and that of the Finnic East are the more easily explained, because, according to the Ossetic tale, the Ossetic race once extended considerably farther north than is the case at present (*Asia Polygl.*[2], p. 83).

The state of the case as regards India may be more briefly dismissed. We have already seen that ancient finds of iron are not rare in India, which is rich in iron ore. Further, Indian steel was prized even in Greek antiquity (Blümner, *loc. cit.*, p. 70). Nevertheless, we remarked, that in literary monuments iron cannot be traced with certainty before the end of the Vedic period (*cf.* p. 188), when the oldest names of this metal occur. The later terms (*cf.* Pott, *Etymologische Forsch.*, ii. p. 416, and Narahari's *Räjanighanṭu*, ed. Garbe, pp. 11, 12) offer nothing of interest. One of them, Sans. *çastrá*, lit. "weapon," has travelled through the world on the lips of the gipsies as *saster*, with *absin*, "steel" (= Kurd *asin*).

We now proceed to Europe, and to ancient Greece first, in order to look for data as to the first appearance of iron.

Violet-hued (*ἰόεις*), shining (*αἴθων*), or grey (*πολιός*) iron plays an important part even in the Homeric poems, thereby affording a most remarkable contrast between the Homeric period and Schliemann's *Hissarlik*, where all five prehistoric towns seem to be unacquainted with iron. In Mycenæ (*cf.* Schliemann, *Mycenæ*, 141, *f.*), on the other hand, iron was known in the form of knives, keys, &c.; though Schliemann believes that the articles which prove this must be assigned to the beginning of the fifth century B.C. In Homer iron is used as a medium of exchange like copper, and is stored in the treasure chambers of the rich. At the funeral games of Patroclus (*Il.*, xxiii. 825, *f.*) Achilles offers as a prize a mass of iron (*σόλον αὐτοχόωνον, i.e.*, "merely smelted, not wrought;" meteoric iron is not to be thought of), which will supply the lucky winner with all the iron he will need for five years' time.* It serves

* ἕξει μιν καὶ πέντε περιπλομένους ἐνιαυτούς
χρεόμενος· οὐκέν γὰρ οἱ ἀπεμβόμενός γε σιδήρου
ποιμὴν οὐδ' ἀροτὴρ εἶσ' ἐς πόλιν, ἀλλὰ παρέξει.

"This passage may be understood to mean either that the winner of the *σόλος* has the iron utensils necessary for five years made in advance, and made in the town; and then keeps them stored at home against the time they will be needed; or we may assume that the countryman furnishes the smith with iron from his own store when he wants anything made, as is not unfrequently done in the country to this day; and from this the necessary inference would be the existence of village or wandering smiths" (*cf.* Buchholz, *Die homer. Real.*, i. 2, p. 336).

principally as the material for making implements used on the land; but axes also, and swords, knives, clubs, arrow-points, are frequently mentioned as made of iron. Indeed, *σίδηρος* sometimes of itself means axe and sword. Nevertheless, as we have already pointed out, the linguistic relation of *χαλκός* : *σίδηρος* points with great probability to the historical priority of the former.

This is characterised by a Greek story recorded by Herodotus (i. 67, 68), and placed by him in the time of Crœsus. Liches, a Spartan citizen, having set forth in quest of the bones of Orestes, comes to a smithy (*χαλκήιον*) in which he sees iron being smithied (*σίδηρον ἐξελαυνόμενον*). At seeing this he falls into amazement (*ἐν θώματι ἦν ὁρέων τὸ ποιεύμενον*). The smith (*χαλκεύς* not *σιδηρεύς*) marks it and says: "Thou, that art amazed to see smithying, what wouldest thou say, hadst thou seen what I have seen," and so on. The appointments of the smithy are mentioned as being bellows (*φύσαι*), hammer (*σφῦρα*), and anvil (*ἄκμων*). This story is instructive in that it must have been invented at a time when the manufacture of iron was still something new; and because the smith, of whom it is expressly said that he was working *σίδηρος*, nevertheless is called *χαλκεύς* (*χαλκήιον*, "smithy").

No indication when precisely iron became better known in Greece can be found.*

The place whence the Greeks gained the acquaintance of this metal admits also only of conjecture. The mainland of Greece is not particularly rich in iron ore (Blümner, *loc. cit.*, p. 74). The Peloponnese is an exception, especially at the promontory of Tænarum, where perhaps the Phenicians, if our comparison of Ταίναρον = Heb. *tannûr*, "smelting-hut" (*cf.* above, p. 159), is right, worked the iron ore.

The Greeks then at an early time depended on foreign metal deposits. At a very early time a definite tradition established itself in Greece as to the origin of iron. It is referred by a very ancient tradition to the neighbourhood of the Pontus Euxinus, to the Phrygian Ida, in whose woody dales the Ἰδαῖοι Δάκτυλοι, Kelmis, Damnameneus, and Akmon are represented as discovering and working the bluish iron. Both in this passage from the *Phoronis*, which we have already given, and which is the oldest that mentions the Idæan Dactyli (*cf.* above, p. 164), and in the words of the Scholiast which accompany it (*γόητες δέ ἦσαν καὶ φαρμακεῖς. Καὶ δημιουργοὶ σιδήρου λέγονται πρῶτοι καὶ μεταλλεῖς γενέσθαι*; Schol. Apoll. A., i. 1126), iron alone, and not the other metals, is mentioned, so that it was only in later times apparently that they were connected with the Dactyli. The Parian Marble (*ἀφ' οὗ Μίνως ὁ πρῶτος ἐβασίλευσε καὶ Κυδωνίαν ᾤκισε καὶ σίδηρος εὑρέθη ἐν τῇ Ἴδῃ. εὑρόντων τῶν Ἰδαίων Δακτύλων Κέλμις καὶ Δαμναμενέως ἔτη* 1168 *βασιλεύοντος Ἀθηνῶν Παιδίονος*) actually gives a definite year for the discovery of iron.

If we only knew a little about the languages of the nations of Asia Minor, a simple and satisfactory explanation of the G. *σίδηρος*

* *Cf.* the remarks by Lang, Sayce, and Leaf in the *Academy*, 1883, Sept. 22, 29, Oct. 23.

(Dor. and Æol. σίδαρος; Sappho, 119), which stands quite by itself amongst the Indo-Germanic names for the metals, might be forthcoming. It perhaps deserves to be noticed that the stem σιδηρο-, though elsewhere it is scarcely ever employed, as we have seen, to form names of persons or places, in Lycian is used for both. *Cf.* Σιδαροῦς, Σιδηροῦς, town and harbour of Lycia; also a volcanic promontory in Lycia, with a temple of Hephæstus (*Scylax Geog. Min. T.*, i. p. 301), Σιδαρύντυος, an inhabitant thereof (Pape, *Eigennamen*, s.v.), and Σιδάριος, a proper name in a Lycian inscription (M. Schmidt, *The Lycian Inscriptions*, p. 12). But according to a verbal communication from M. Schmidt, the inflection of the Lycian proper name shows that Σιδάριος is a native personal name. The attempts which have been made to find a derivation in Indo-Germanic all seem to me of a very problematic nature.*

A special name for steel, the preparation of which by tempering was known in Homeric times (cf. *Od.*, ix. 391), does not occur in Homer's vocabulary. Κύανος, according to Lepsius' convincing investigation (*op. cit.*, p. 130), "never anywhere means anything but a blue colouring matter which was generally prepared from copper blue either directly, or else a blue glass was made from it and then pulverised."

The earliest expression for steel is rather ἀδάμας, -αντος, which is mentioned for the first time by Hesiod (*Scutum*, 137), and is used of a steel cap (κυνέη). This word is usually referred to the root δαμ in δάμνημι, δαμάω, &c., so that it would, like the Homeric ἀδάμαστος, mean the "unconquerable" metal. If, however, we reflect on what, for the designation of so relatively a recent idea as that of steel, is such a remarkable word both as regards form and meaning, one cannot resist the suspicion that we here have before us a foreign word, perhaps the Caucasian *andun*, in a Græcised form. In this connection we may remark that Tomaschek (*Z. f. o. Phil.*, i. 125) calls attention to a Caucasian (Udic) *zido* for σίδηρος also. At anyrate, it is certain that another and more common name for steel than ἀδάμας, that is χάλυψ (also χαλυβδικός; Eur., *Her.*, 162), which is first used by Æschylus (*Prom.*, 133):—

κτύπου γὰρ ἀχὼ χάλυβος διῇξεν ἄντρων μυχόν,

travelled to Greece from the neighbourhood of the Caucasus and

* Curtius[4] and[5], p. 246, compares Sanskrit *sviditas*, "smelted," and *svidani*, "iron pan." O.H.G. *sweizjan*, *frigĕre*, and thinks σίδηρος meant "smelted out," but that this does not prove that the Indo-Europeans were acquainted with iron. Pott (*Et. Forsch.*, i. p. 127) compares Lith. *swidus* (as also does G. Meyer, *Griech. Gr.*, p. 197) and Latin *sīdus*, *sīderis* from **sīdesis*. If the latter is correct, the only thing in question is the connection of the root of σίδ-ηρος. Nevertheless, some historians of culture (*cf.* Lenormant, *Anfänge d. Cultur*, p. 58) on the strength of this regard the Greek word as designating meteoric iron (*sīdus*, "star"), which is absolutely without reason. The Coptic *benipe* "iron," also, which is usually quoted in this connection as analogous, because Brugsch compares it with the Egyptian *bua en pe-t*, and treats it as meteoric iron, receives quite another explanation at the hands of Lepsius (p. 108). Indeed, even the σόλος αὐτοχόωνος of Homer, as we have hinted, has been interpreted as meteoric iron (*cf.* Ratzel, *Vorgesch. d. Europ. Menschen*, p. 283).

the Pontus. The word undoubtedly goes back to the name of the northern nation of the Chalybes (Χαλύβες, Χάλυβοι). The abodes of this people, as known to antiquity, are variously given as being situate to the north of the Pontus and Caucasus as well as in Armenia and Paphlagonia to the south; and the Chalybes are uniformly spoken of as distinguished for the mining and working of iron. Thus, the σιδηροτέκτονες Χάλυβες are mentioned by Æschylus (*Prom.*, 715) immediately after the nomad Scythi (Σκύθαι νομάδες), with which the Hesychian glosses are in agreement: Χάλυβοι· ἔθνος τῆς Σκυθίας, ὅπου σίδηρος γίνεται and Χαλύβοικον· τῆς Σκυθίας, ὅπου σίδηρον μεταλλᾶ. Xenophon in his *Anabasis* distinguishes two races of Chalybes, one between the Araxes and Cyros, the others vassals of the Mossynœci on the Pontus. Of the latter he says (v. v. 1): ὁ βίος ἦν τοῖς πλείστοις αὐτῶν ἀπὸ σιδηρείας κ.τ.λ.

That the Tibarenes and Moschi of the Bible point to the district of the Pontus has already been said (*cf.* above, p. 196, note). So, too, the "iron from the north" mentioned in Jeremiah xv. 12, may belong here.

Like the Greek σίδηρος, the Latin *ferrum* has no connection with the other Indo-Germanic names for the metals.* Nor is there any lack of evidence to show the want of iron in Latium at the most ancient period. The *faber ferrarius* is missing from the guilds of Numa. Further, the use of iron is uniformly excluded from the most ancient cults. It was with a bronze knife that the Roman *Flamen Dialis* had to shave his beard, with a bronze plough that the area of a new town must be marked out, and so on (*cf.* Helbig, *Die Italiker in der Poebene*, pp. 80, 81).

In the pile-dwellings of the Po iron is not found.

But from what quarter came the Romans first acquaintance with the important metal which subsequently became so familiar to them that the smith is called *faber ferrarius*, and the sword and plough were termed by metonymy *ferrum*? Perhaps the Lat. *ferrum* itself indicates the way; for as it may readily be traced to **fersum*, I, with Lenormant, C. Weise (*Griech. Wörter im Lat.*, p. 153), and others, still think it most probable that *ferrum* is to be connected with the expressions already quoted from the Semitic languages, Hebr. *bar(ĕ)zel*,† Sumer. *barzil*, &c. That Phenician (Carthaginian) words found their way into Latin directly (*i.e.*, not through Greek agency) is shown by cases such as Lat. (*c*)*tunica* : Hebr. *kĕtonet*. Lat. *chur*, *palma*, *pellex*, &c., are probably of similar origin (O. Weise, *Rhein. Mus.*, 1883, p. 540, *ff.*). It is also known that the Phenicians extended their voyages at least as far as *Cere* (*cf.*

* The attempt to compare *ferrum* with the other Indo-Germanic names of metals has been made by Pictet (*Origines*, i. p. 197), who classes it with Sans. *bhadhram*, "iron" (*t*), and by Lottner (*K. Z.*, vii. p. 183), who suggests A. S. *brass*. *Cf.* also Pott, *Et. Forsch.*, ii. p. 278; Schweizer, *K. Z.*, i. p. 478; Fick, *Vergl. Wörterb.*, ii. p. 169.

† That this word was also Phenician is shown by an ancient Phenician inscription from Cyprus (*Movers*, ii. 3, p. 69).

Mommsen, *Rom. Geschichte*, i. p. 128). Some days north, however, of the Punic factory here erected lay the island of Elba with its stores of iron, insula inexhaustis Chalybum generosa metallis (Virgil), called Αἰθάλη, the "sooty" by the Greeks.

Now turning from the south and ascending the broad back of our quarter of the globe, we find the absence of iron in the oldest periods of which we have historical knowledge brought out by clear evidence on all sides. We may remark that this absence becomes more marked as we go towards the north-east. According to the Germania of Tacitus (c. 6) "iron did not abound in Germany" ("ne ferrum quidem superest"). In the north, Cæsar knew that among the Britons iron only occurred near the sea and there only in inconsiderable quantities (*B. G. V.*, 12). In the east, Tacitus mentions the linguistic group of the Prusso-Lettlanders under the name of the Æstii. He says (c. 45): "Rarus ferri, frequens fustium usus." His knowledge ends with the Fenni (Finns), who, "*inopia ferri*," "for want of iron," have recourse to sharpened bones for their arrows. The knowledge of iron and how to work it spreads to the north of Europe and the adjoining portions of Asia in two directions: from south-west to north-east and from south-east to north or north-west. The point of departure is found in the one case among the Celts, in the west, who in their conquering marches along the Alps from the fifth century onwards must have come across rich deposits of metals. Deep in the Austrian Alps, at the northern foot of the Thorstein, in a profound ravine at the bottom of which lies the little lake of Hallstadt, recent excavations have brought to light * a life-like picture of a Celtic settlement with its salt-mine and its manufacture of iron. Noric iron soon became known in Italy and throughout the north. Tacitus (c. 43) still knows in the east on the Carpathians a Gallic people slaves to the Germans, the Cotini, who "quo magis pudeat"—for the "God that iron made meant no men to be slaves"—"et ferrum effodiunt." In Gaul itself iron was dug for. Cæsar expressly states this of the Bituriges (*De B. G.*, vii. 22), who proved themselves very useful at the siege of Avaricum: "Eo scientius quod apud eos magnæ sunt ferrariæ atque omne genus cuniculorum notum atque usitatum est." In this connection it is noteworthy that designation of the native metal common to all the Celtic languages (Cymr. *mwyn*, Ir. *mëin, mianach*) † has spread (Thurneysen, *Keltoromanisches*, p. 67) to the Romance languages (Fr. *mine*, "*mine*," It. *mina*, &c.). When the Celts made the acquaintance of iron, whether from the Greeks of Marseilles, or from Rome, where, according to Pliny (*Hist. Nat.*, xii. 1. 5), a certain Helico from Helvetia abode at a time

* Recent investigations, I am informed by Herr M. Much, have made it probable that the burial-ground at Hallstadt was not begun by the Celts, but only used by them at the end.

† The root of the Celtic stem **mein* is perhaps the above-mentioned (p. 198) Indo-Germanic *smei, mei*, "artificially prepare," which appears in O.H.G. *smida*, O.S. *meid*; so that the fundamental meaning of the Celtic **mein* would be something like "workable" metal.

before the great Celtic migration in order to learn smithying, "fabrilem ob artem," they formed, with a word corresponding to the Indo-Germanic *ayas-as*, "copper, metal," but belonging to a different vowel-scale, viz., **is* (: *ais*: *cf.* above, p. 188, note), a name for the new idea by appending a derivative suffix, common among them, *-arn* : **isarn*. Later the *s* between the vowels must have dropped out, just as it did in *sinr* – *sisyr* (Lat. *soror*) and *giafi* – *gisal* (O.H.G. *gisal*); *cf.* Zeuss, *Grammatica Celtica*, pp. 827 and 52. Hence the forms Irish *iarn*, *iarnn*, Cymr. *haiarn*, *hœarn*, Corn. *hoern*, *hern*, *horn*, Arenc. *houarn*, *haiarn*, &c. The *s* between the vowels, however, was still retained,* when the word along with several terms used in the manufacture of iron, which we shall meet subsequently, was taken over by the Teutonic languages, in which it appears as Goth. *eisarn*, A.S. *îsern* (Eng. *iron*), O.N. *îsarn*, *jarn*, O.H.G. *îsarn*. The suffix *-arn*, foreign to the Teutonic languages, betrays the loan.†

The part assigned to the Teutonic peoples in the history of culture was to convey, for their part, the precious gift farther west. In Old Norse a certain kind of iron (*ferrum ochraceum*), which occurs frequently in the north, was called *raudi*. This word has no connections in the other Germanic languages, but through the O.S. *ruda*, "metal," Lith. *rúdà* (a Slavonic loan-word: *cf.* A. Brückner, *Die Slav. Lehnwörter im Lateinischen*, p. 128), attaches itself to Lat. *raudus*, Sans. *lóhám*, &c., with which we have made acquaintance above (p. 191). According to this, the O.N. *raudi* originally meant copper, then undoubtedly the red, copper-like iron, *ferrum ochraceum*. This word found its way from Norse through Finnic into the other West Finnic languages, and has become the regular West Finnic expression for iron-ore: Finn. *rauta*, Esthon. and Weps. *raud*, Liv. *raud*, *rôda*, *raod*, Lapp. *ruovdde*. There are also numerous other Finnic expressions for iron and its working, which are of Teutonic and Norse origin. For instance, *malmi*, *malvi*, "iron ore," *takki rauta* (Swed. *tackjern*), "raw iron," *melto-rauta*, or merely *melto*, *mento*, *manto*, Lapp. *malddo* (Swed. *smälta*), "iron not hammered," &c.; the names for the furnace and the blast-furnace are also borrowed. At the same time there is no lack of genuine words (*cf.* Ahlqvist, *Culture*, 67, *f.*, and *Bulletin de l'Acad. de St. Pétersbourg*, vi. p. 178). For it must be acknowledged that the Finns, when once they had been directed to the treasures of their lakes and swamps (*cf.* the quotation given above, p. 214, as to the birth of iron), soon attained great skill in the working of iron, and indeed, perhaps, even outstripped their Teutonic neighbours. A living testimony to their skill in smithying is afforded by the extremely numerous names of

* It is shown still in the Burgundian proper name Isarnodori: "Ortus haud longe a vico, cui vetusta paganitas ob celebritatem clausuramque fortissimam superstitiosissimi templi Gallica lingua Isarnodori, *i.e.*, ferrei ostii indidit nomen" (*V. S. E. Eugendi. Abb. mon. S. Claudii in Burgundia*; *cf.* Diefenbach, *Origines Europææ*, p. 361).

† A more recent stratum of loans: O.I. *iarn* = O.N. *jarn*, A.S. *îren*.

places and districts in Finland, which are compounded with *rauta*, "iron," such as *Rautajärwi*, *Rautawesi*, *Rautakangas*, and many others, like the Old High German *Isarnho*, *Isarpach*, *Isarhus*, &c. (*cf.* Förstemann, *Deutsche Ortsnamen*, p. 139).

A totally different explanation of the West-Finnic words (Finn. *rauta*, &c.) is given by Lenormant (both in *Die Anfänge der Cultur*, i. p. 79, and *Transactions of the Soc. of Biblical Archæol.*, vi. p. 354), who compares them with the Accad. *urudu*, "copper," already mentioned by us, and traces the Lithu-Slavonic expressions (*ruda*, &c.) to them.

The Teutonic word for iron is, however, only found in the western languages of the Finnic family, as was also the case with a Teutonic name for gold (*cf.* above, p. 178). To the east of the linguistic area mentioned, another word for iron, as for gold, prevails: Ostj. *karte*, Wotj. *korte*, Syrj. *kort*, Tscher. *kirtne*, Wog. *ker*, *kier*, which, like the East Finnic name for gold, can only be explained if it is referred to the Iranian branch of language. Here, O. Pers. *kareta*, N. Pers. *kard*, Buchar. *gard*, Kurd. *ker*, Osset. *khärd*, &c., means "the iron knife," and it is easily understood that tribes of wild barbarians might name the metal, which they had never seen before, after the implement in which it was brought to their notice, either for the first time or most commonly from Persia. The word is known in Slavonic (Pol. *kord*, &c.) and Lithuanian (*kárdas*, Polish loan-word "sword;" *cf.* A. Brückner, *op. cit.*, p. 202).

Between these currents from the east and from the west lies the area of the Lithu-Slavonic languages with a common name for iron, Lith. *geležis*, Lett. *dzelse*, Pruss. *gelso*, O.S. *želězo*. We have already (above, p. 195) pronounced in favour of connecting these words with the Greek χάλκός. The fundamental meaning of the northern words would then have been "copper," a meaning which, as we may well conjecture, passed into that of iron under the influence of the trade with the Black Sea, as the Greek word, owing to relations with the Phenicians, has taken the meaning of bronze (above, p. 196).

Finally, I have to mention in Europe a name for iron which is as interesting as it is obscure. It is the Albanian *hékur*, also *ekur*. It is the only name for a metal common to all the dialects of this language which is not obviously borrowed from abroad. The only suggestion which perhaps could be put forward to explain this obscure word would be—inasmuch as initial *h* in Albanian, as Professor G. Meyer informs me, is not necessarily organic—to compare the Armenian *erkath*, Georg. *rkina*, &c. (*cf.* above, p. 206).

The names for steel in the north are, as might be expected, relatively recent.

Nevertheless, the Teutonic languages have a name for steel which recurs uniformly throughout all the dialects: O.H.G. *stahal*, M.H.G. *stahel*, *stachel*, *stâl*, O.N. *stál*, Eng. *steel*, which shows that the art of hardening iron soon became known here. From the Teutonic, loans were made by Lapponic (*stalle* by the side of *teräs*, *teras*: Lett. *térauds*) and by Slavonic (Russ. *stalĭ*). A certain

explanation for the Teutonic words is still wanting (**staklo*: O. Pr. *ponu-staclan*?). O.H.G. *stachila*, *stachulla* "*cuspis*" (**staglo*) has been suggested.

But Slavonic was dependent for its names for steel not only on the west but also on the east. Russ. *bulatŭ*, &c., is connected with Asia Minor, as we have already seen. *Cf.* further, Serv. *čelik*, Alb. *tšelik*, Turk. *čelik*, Pers. *čaluk*, Russ. *haralugŭ*, Džagat. *karâlûk*; finally, also, Pol. *demeszek*, "damascened iron," Serv. *demiskinja*, Turk. *dimiški*, N.G. *διμισκί* (Damascus).

The widest expansion, however, is that of the Lat. *acies* (= *nucleus*) *ferri*, which in Middle Latin developed into *aciare*, *aciarium*. From the latter are derived, on the one hand, It. *acciajo*, Span. *acero*, O. Port. *aceiro*, Fr. *acier*, Wal. *otzel*, Hung. *atzél*, South and West Slav. *ocěli*, *ocel*, and on the other, It. *acciale*, Ven. *azzale*, O.H.G. *ecchil*, *ecchel*, &c. (N.S. *jeklo*); *cf.* Diez, *Etym. Wörterb.*[1], p. 5.

The Lithuanian and Old Prussian *pliënas*, *playnis*, is compared rightly by Fick (*Vergl. W.*[2], p. 803), with O.N. *fleinn*, "point, spear," A.S. *flan*, "arrow, missile."

CHAPTER VIII.

THE HISTORICAL ORDER OF COPPER, BRONZE, AND IRON.

Now that we have reviewed the considerable material afforded by the Indo-Germanic names for copper, bronze, and iron, it may be well to briefly put together the historical results which we believe we have attained. They are:—

1. It seems probable that the two equations *áyas-æs* and *lôhá-raudus*, which reach back to the vocabulary of the original people, meant not iron or bronze but the pure, dark copper, which accordingly was known to the original Indo-European people.

2. For deciding the sequence of the metals amongst the Indo-Germanic peoples, it is worthy of notice that a series of ancient names of copper gradually assumed the meaning of iron. This applies to Sans. *áyas*, Zend *ayanh*; Lat. *æs* (to which probably belongs also Celtic **is-arn* = Goth. *eisarn*), to Sans. *lôhá*, first "copper" then "iron," to O.N. *raudi*; Lat. *raudus*, to Lith. *geležis*; G. χαλκός.*

3. It cannot be doubted that in Greek χαλκός, which meant first "copper," and then under Phenician influence bronze, is historically prior to σίδηρος. In contrast with the state of things in the north it is to be specially observed that Greek proper names, both of places and persons, are frequently formed from the word for copper (bronze), but scarcely ever from that for iron.

4. In the north of Europe the Teutons obtained their name for iron through the Celts, the West Finns through the Teutons, the East Finns from Iranian soil, which suggests the conclusion that the knowledge of iron spread in the one case from west to east, in the other from south-east to north-west. The circumstance that, amongst Celts, Teutons, and Slavs, proper names are formed principally, perhaps exclusively, from the names for iron, permits of the conjecture that it was this metal which first exercised an important influence on the culture of the north. In any case, those who assume immense bronze industries *before* iron in the north of our quarter of the globe must attempt an explanation of this circumstance.

* The same relation would exist in Lat. *ferrum*: A.S. *braes* (**bhṛs-?*), if Lottner's equation (*cf.* above, p. 207, note) is correct.

5. A primeval centre of diffusion for bronze seems to have existed in the home of the civilised Sumero-Accadian people. From this neighbouring Semitic centre of civilisation the south of Europe obtained its acquaintance with bronze. As regards the north, neither language nor tradition gives a direct indication tending to solve the question whether the numerous and skilfully wrought articles of bronze found on this side of the Alps came from a native bronze industry which then would be antecedent to an iron industry, or whether they are due to ancient traffic with the civilised countries of the south, with Etruria, Italy, Greece, Thrace. On general grounds, however, and especially because of the inconsistency which exists between the assumption of a highly developed Bronze Age amongst the northern peoples, and the low stage of culture which is incontestably demonstrated to have prevailed amongst them, I conclude in favour of the views represented by Lindenschmit (*Archiv f. Anthropologie*, viii. 161, *ff.*). "The bronzes, which on this side of the Alps make their sudden appearance, completely developed in form and workmanship, can from their whole character only be regarded as the products of a highly developed industry transmitted by traffic, and that from the south, from the littoral of the Mediterranean, particularly from Italy, whence a much more vivifying transmission of ancient culture to the north can be traced than from the east, from the countries bordering on the Black Sea." . . .

"The use of bronzes in itself, in connection with the isolated primitive attempts to imitate them, cannot have exercised any noticeable influence on the development of the north, least of all such as deserves the term 'Bronze Age' even in the remotest degree" (*cf.* further, *Handbuch d. Deutschen Alterthumskunde*, i. 54). "The so-called bronze period appears then to have been nothing but a time of active commercial and industrial intercourse between the Mediterranean peoples and the north. The products carried north show no indication whatever either that they were the outcome of the native capacity of the Celto-Teutons—are related with earlier native creations—or that they were developed or grew into anything subsequent. They betoken a state of culture so foreign and so much superior to the production alike of the Stone Age which preceded, and of the Iron Age which followed, that they cannot possibly, in any way whatever, be regarded as evidence that the natives themselves worked the metal, as proving the existence of a natural period of transition from a national culture of an early date to one of a later." *

6. Important points await explanation at the hands both of archæologists and philologists. I may mention the Persian names for iron, Afgh. *ôspanah*, &c., the G. σίδηρος, Celtic *umæ*, O.H.G. *arnz*, &c., the etymology of which still requires solving.

* The opposition to Lindenschmit's point of view is represented in the works of Sophus Müller, J. Undset, O. Rygh, Hildebrand, and others.

CHAPTER IX.

TIN AND LEAD.*

ARCHÆOLOGICAL research as to the times at which lead and tin made their appearance, relatively to each other and to the other metals, has not yet attained to a decisive result. Whereas, previously it was believed that tin, which is found in the Swiss lake-dwellings, in Hallstadt (*cf.* Lubbock, *Prehistoric Times*, p. 20), &c., belonged to the most ancient of metals, and that lead made its first appearance along with silver in the so-called Iron Age (*cf.* Lubbock, *op. cit.*, p. 15), this view has now been shown, particularly by Schliemann's excavations, to be altogether untenable. In Hissarlik lead is found in all five prehistoric towns, tin in none. In Mycenæ, where, as is well known, the Bronze Age prevails almost exclusively, lead was discovered in large quantities also (*cf.* Schliemann's *Mycenæ*, p. 145).

In ancient enumerations of metals, lead uniformly concludes the established succession. Tin, which is mentioned at the end for the first time by the Hebrews (*cf.* Numbers xxxi. 22: "Howbeit the gold and the silver, the brass, the iron, the tin, and the lead, every thing that may abide the fire," &c.), on the other hand, occurs as a rule in the Assyrian-Accadian inscriptions between silver and bronze, at any rate before iron (*cf.* Lenormant, *Transactions of the Soc. of Bibl. Arch.*, v. pp. 337, 345). This points to the great antiquity of tin in Mesopotamia (*cf.* above, p. 192).

The tradition of nearly all civilised peoples is acquainted from the very beginning with two separate expressions for tin and lead. The Bible has *'oferet* and *b(ĕ)dil(?)*, the Veda *sîsa* and *trapu*, the Avesta *sru* (*cf.* Justi, *Handw.*, p. 308) and *aonya* (?),† Homer μόλιβος and κασσίτερος, Latin *plumbum* and *stannum*, though it

* *Cf.* the extremely learned and copious article "Zin" in Schade's *Altdeutsches Wörterbuch*[2], 1872–82, in which a detailed picture of the primeval trade in tin is given. Although I refer the reader who wishes for further information on the subject to this work, which as regards the facts of the subject is fundamental, I must add that the philological comparisons made by Schade, frequently differing from the account given above, are not to be accepted with the same confidence; *cf.* of late, Blümner, *Terminologie u. Technologie*, iv. 81 *ff.*, and K. B. Hofmann, *Das Blei bei den Völkern des Alterthums*, Berlin, 1885 (Virchow—Holtzendorff).

† *Cf.* above, p. 194, note, and also Lagarde, *Armen. Stud.*, p. 12.

may be a matter of doubt whether these expressions always really meant what we understand at the present day by tin and lead in the scientific sense (*cf.* Kopp, *Geschichte der Chemie*, iv. p. 125, *f.*). A remarkable exception is afforded, as we have already mentioned, by the Egyptian inscriptions, in which Lepsius (*cf.*, *op. cit.*, p. 114) has been able to find no special word for tin, by the side of the *ṭeḥṭ*, *ṭeḥṭi*, *ṭeḥṭu* (superscribed on bricks of lead), which, as Coptic would indicate, meant "lead." It frequently happens, however, that one and the same word in two languages means now one metal, now the other. Thus, in Accadian-Assyrian, *anna-annaki* undoubtedly means tin (*cf.* above, p. 272), whereas this very word in the Hebrew *ănâk* has taken the meaning of "lead." The relation of Slav. *olovo*, "lead": Lith. *alwas*, &c., is the same.

It not uncommonly happens that languages, especially of uncivilised peoples, can only show one word for both metals, as Mordv. *kivä*, Tscher. *vulna*, Syrj. *ezjś* (also silver), Wotj. *uzveś* (also silver). A similar state of things is indicated by Lat. *plumbum nigrum*, "lead," and *plumbum album*, "tin."

The coincidence in the linguistic designations for these two metals, which chemically are so utterly different from each other, may be due to their resemblance in colour and appearance, as also to the limited extent of the use to which they were put. At any rate, it was only when metallurgical knowledge had made considerable advance that lead and tin were distinguished by different names.

However, as regards the linguistic character of the names for lead and tin, it is that of travelled words, which have journeyed far and wide over land and sea; and no one, not even Pictet, has ventured to claim that they are Indo-Germanic in their origin. It is, however, very difficult, perhaps impossible, to ascertain the starting-point of these words, important as they are for the history of culture, with certainty, and I must express a fear at the outset that we shall not do much more than establish some individual data, and group together some words which are pretty certainly related. But it is a duty to make this remark, as against the utterly unscientific use which men like Pictet, Lenormant, and many others, have made of the words in question, making them prove anything they like.

The most ancient term for tin that we come across in Europe is, as is well known, the Homeric κασσίτερος, which is confined to the *Iliad*, and the translation of which as tin (*plumbum album*) is guaranteed by the express testimony of Pliny (*Hist. Nat.*, xxxiv. 16, 47).* Ornamentations for cuirasses, shields, and waggons are made of tin. Even greaves of tin are mentioned, but they were perhaps only covered with tin. It has the epithet ἑᾱνός, which, according to Curtius (*Grundzüge*[5], p. 376), belongs to the root *ves*, and means "enveloping." Even Herodotus (iii. 115) knows that

* "Sequitur natura plumbi, cuius duo genera, nigrum atque candidum. Album habuit auctoritatem et Iliacis temporibus, teste Homero, cassiterum ab illo dictum."

κασσίτερος (like τὸ ἤλεκτρον) comes from the farthest point in the west to which his knowledge extends, that is from the Κασσιτερίδες, to Greece. But he is not clear as to the actual position of the islands, and it was the Romans who first applied the name *Cassiterides* to the Scilly Isles, which contain no mines whatever (*cf.* Kiepert, *Lehrb. d. alten Geogr.*, p. 328). Tin was rather obtained from the remotest antiquity to the present day from the south-west corners of Cornwall, England, where Cæsar (*B. G.*, v. 12) is acquainted with it.* Shortly after him, Diodorus (v. 22) gives a detailed description of the mining of tin in this region, and of its transport right across Gaul to Massilia and Narbo (*cf.* O. Schade, *Altd. Wörterbuch*, p. 1272). Doubtless, the most ancient traders between Briton and Hellas were the Phenicians. This appears not only from general considerations but from the definite statement of Pliny (vii. 56, 57): "Plumbum ex Cassiteride insula primus adportavit Midacritus." Midacritus, of course, is the Phenician Melkart, G. Ἡρακλῆς, who accompanied the Phenicians on their sea-voyages as their patron god. Again, the Greek κασσίτερος, which has no etymology in Greek, may be compared with the Semitic names for tin, Assyr. *kāsazatirra*, Accad. *id-kasduru* (*cf.* Lenormant, *op. cit.*, p. 337). The Greek word then found its way on the one hand into the Slavonic languages, O.S. *kositerŭ*, N.S. *kositer*, Croat. *kositar*, Serv. *kositer*, and Wallachian *kositoriŭ*, and on the other hand, obviously in the train of Alexander the Great's conquests, into Sanskrit (*kastīra*; cf. *P. W.*, ii. p. 192).† The Arabian word (*kazdir*) borrowed from the Greek has travelled widely in Africa as *keṣdir*.

If we put this together with the extreme antiquity, referred to above, of the manufacture of bronze in Mesopotamia (*cf.* above, p. 192), it is most probable that κασσίτερος is a purely Accadian-Assyrian word which was transferred by the Phenicians to the output of the rich tin-mines they discovered in the west of Europe.

Nevertheless, it would be quite possible for κασσίτερος to be genuinely Hellenic, and to be connected with Sans. *kaṅsá*, *kâṅsya* (*cf.* νίσσομαι from *νι-νσ-jομαι), "metal vessel," "metal," "brass" (*B. R.*). But, then, what was the original meaning of this equation? and how is the peculiar suffix -τερος of the Greek to be explained?

If the Greek κασσίτερος gives rise to a number of riddles, numerous controversies also are attached to the Homeric μόλιβος (*Il.*, xi. 237) and μόλυβδος (in μολυβδαίνη; *Il.*, xxiv. 80), "lead."

To begin with, we ought to renounce the useless attempt to connect G. μόλυβος with the Lat. *plumbum* by any common fundamental form such as **mluva* (Curtius, *Grdz.*[5], p. 370) or **mlubo* (Fick, *Wörterb.*, ii.[3] 200). A loan by the Latin from the Greek, again (*μλυβος, *μλυβος = *plumbum* from *βλυβος, Rhod. περιβολιβῶσαι:

* "Nascitur ibi plumbum album in Mediterraneis regionibus, in maritimis ferrum, sed ejus exigua est copia, ære utuntur importato."

† In the *Peripl. maris erythr.*, ed. Fabricius, c. 19, κασσίτερος is expressly mentioned as an article imported into India.

μόλυβος), which I formerly thought possible, can scarcely be entertained.

If one thinks of the uncertainty of the final syllables of the Greek word (μόλιβος, μόλυβος, μόλυβδος), one becomes suspicious of its Greek origin. Further, before the Greeks worked the lead-glance of the Laurion Mountain (Blümner, *loc. cit.*, p. 89, note) they were dependent on importation for the metal. The place whence that first suggests itself is Spain with its abundant lead. Does μόλυβος (Mod. G. μολύβι) conceal an Iberian word in a Phenician dress, *e.g.*, the name of the country *Medu-briga* in Lusitania (*medu* = μολυ), the inhabitants of which are expressly called Plumbarii (Pliny, iv. 21, 35)? A town, Μολυβδίνη, too, is mentioned in the district of the Mastarnians, near the Pillars of Hercules. But we do not possess any indication, even remotely certain, of the origin of μόλυβος.

We can see somewhat more clearly in the case of Lat. *plumbum*, which also recurs in the Romance languages and Albanian, only we have to look in a totally different direction. For most of their lead, which they used especially for water-pipes, the Romans depended essentially on Spain, where indeed there were Carthaginian lead-mines, Gaul and Britain. Traffic in this metal was done in the shape of bars or cakes, such as are commonly found in France, England, and Spain. They are marked with stamps and inscriptions, such as the name of the Roman emperor, &c., to indicate that they come from the state mines (*cf.* Hoffmann, *loc. cit.*, p. 10; Blümner, *loc. cit.*, p. 90, *f.*). Now, what if the name of the shape in which the lead came, gradually came to be applied in Latin to the lead itself? Such things do occur in the history of trade. Thus in Roumanian, for instance, *grâu*, "kernel" = "pomegranate," *cannello*, "little stalk" = "cinnamon" (Diez, p. 64), &c. Now the Lat. *plumbum* (**plomfo*) corresponds well enough to Gr. πλίνθος, "bar," "brick," if one decides to refer the word to a fundamental form **plenthо*, or to regard λ as representing a sonant liquid (*cf.* G. Meyer, *Griech. Gr.*[2], p. 66, *f.*, p. 35). The neuter gender of Lat. *plumbum* is explained by the analogy of the names of the other metals in Latin.

Tin is called in Lat. *stannum*; though the word probably did not get this meaning before the fourth century A.D., and previously indicated various alloys of lead (*cf.* Kopp, *Geschichte der Chemie*, iv. 127; Blümner, *loc. cit.*, p. 81, note 6). The original form was not *stannum*, but *stagnum*, *stagneus*, *stagnatus*, as is indicated by the Romance words: It. *stagno*, Sp. *estaño*, Fr. *étain* (*cf.* Diez, *Et. W.*[4], p. 396).

The derivation is as yet obscure, in spite of O. Keller (*Bursians Jahresbericht*, xli. 370) who thinks of τήκω, "melt" (root *stāk*?). But the Lat. *stag-nu-m* might quite well go back to a root *stagh*, and then be connected through the G. στυφ-ό-λη, "plumb-line," with the "plummet," "plummet" (Homeric). From Italy *stannum* in the sense of "tin" spread to the Celtic languages: Ir. *stan*,

* In Basque lead is called *berun*, *beruncz*, "of lead."

stain, *sdan*, Arcm. *stéan*, *sten*, *stin*, Corn. *stéan*, Cymr. *ystaen* (cf. *Manners and Customs*, i. ccccix.). These loan-words have obviously thrust the native expression *créd** gen. *crédi*, *crédi-umai*, "bronze" (*cf.* above, p. 199), which, as we have said, is unfortunately still quite obscure, into the back ground.

For the rest, in Italy the Etruscans at least, who play such an important part in the history of the bronze industry (*cf.* above, p. 213), were not dependent for tin solely on imports, since in the limestone quarries at Populonia, which show traces of ancient workings, besides copper, tin has been found (W. Deecke, *Etrusker*, ii. 255).

In the north of Europe the Celts and Teutons are united by a common term for lead: M.H.G. *lôt*, Dutch *laad*, H.G. *lead* = Ir. *luaide* (**lawlo*). As Gaul is rich in lead (Blümner, *loc. cit.*, p. 90), and the Gauls applied themselves to mining earlier than the Teutons, we have here, as in the case of iron, to do with an early loan effected by the Teutons, only here we have not the linguistic evidence to prove it.

Complete obscurity, on the other hand, enshrouds a second Teutonic term for lead: O.H.G. *bliu*, *bliuwes*, O.N. *bly* (**bleiwo*), which has found its way into the West Finnic languages (Finn. *ply(ijy*, *lyijy*, Lapp. *blijo*), which have no native names whatever for tin and lead. In any case Lat. *plumbum* (Corssen) and N.H.G. *blase* (Schade) having no connection here must be put aside.

Neither has the Teutonic term for tin yet been satisfactorily explained: O.N. and A.S. *tin*, O.H.G. *zin*, which again has spread to the Polish (*cyna*) and Lithuanian (*cinas*), and from the north to most West Finnic tongues (*tinna*). Least objectionable still is it to connect the Teutonic word with O.N. *teinn*, Goth. *tains*, A.S. *tân*, O.H.G. *zein*, "twig," "thin metal rod" (Fick, *Vergl. W.*, iii.[3] 121), in which form the Teutons may first have made its acquaintance at the hands of traders (*cf.* above, p. 217).

A third long chain of words is: It. *peltro*, Span. and Portug. *peltre*, O. Fr. *peautre*, Dutch *peauter*, Eng. *pewter*, O. Ir. *pĕatar*, (also with *s*: Eng. *spelter*, Dutch *spialter*, H.G. *spiauter*, O. Fr. *espeautre*).

According to the laws of the Romance languages this stock of words comes from Italy, but its actual origin is unknown (*cf.* Diez, *Etym. Wörterb.*[4], p. 240).

Finally, total obscurity reigns over the case as regards the Lithu-Slavonic languages, where for lead the expressions O.S. *olovo* (by the side of Lith. *alwas* [Livonic *alu*], O. Pr. *alwis*, "tin") and Mod. Sl. *swinec*, Russ. *svinĕcŭ*, &c. (Lith. *szwinas*, Lett. *swins* [Liv. *svina*]), occur. Probably in both cases the Lithuanian forms are loans from the Slavonic (Brückner, *Fremdwörter*, pp. 67, 144).

The former (*olovo*) seems to recur in Mag. *ólom* (*ón*, "tin"), the latter in Gipsy *swinza*.

* Creidne is the oldest proper name of a smith (*cerd*) in Ireland, which seems to speak in favour of the Irishman's acquaintance with the *créd* in ancient times (Sullivan, *Manners and Customs*, ii. 210).

In this connection it is noteworthy that the Esthonian term *seatina*, "swine tin," originates from a confusion of Russ. *svinécu* and O.S. *svinija*, "swine." As to the East Finnic languages, we may remark that the name for lead is convertible not only with that of tin but also with that of silver: silver occurs commonly enough in lead ore. Thus Syrj. *ezjś*, "silver" and "lead," Wotj. *azveś*, "silver," *uzveś*, "lead and tin," *söd uzveś plumbum nigrum*; *tödi uzveś*, *plumbum album* (*cf.* above, p. 215). Throughout, however, we see how recent in the extreme north acquaintance with the metals is.

Turning now to Asia Minor, we content ourselves with putting together the related words, placing the Indo-Germanic languages first (*cf.* Pott, *Zeitschrift für die Kunde des Morgenlandes*, iv. pp. 260, 261):

1. Armen. *anag*—Hebr. *ănâk*, Assyr. *anaku*, Arab. *anuk*, Syr. *anchâ*, Æthiop. *nâk*, "tin" (*cf.* above, p. 215).

2. Zend *sru*, N. Pers. *surub* (*cf.* Justi, *Handw.*, p. 308), Buchar. *ssurb*, Afgh. *surp*—Arab. *ŭsrub* (*cf.* Klaproth, *Asia Polygl.*, p. 57), "lead."

3. (Hindi *rânga*, Sans. *rañga* *), Buchar. *ârsis*, N. Pers. *arziz*, Armen. *arčič*, Zig. *arczicz*, (*cf.* Pott, *Zigeuner*, ii. p. 58), Kurd. *resas*, *erssas*, *rŭsas* (*Jour. of the American Or. Society*, x. p. 150)—Arab. *razaz*, "tin and lead."

4. Osset. *kala*, Kurd. *kalaj*, Hindost. *kelley*, N. Pers. *kalây*, Pars. *kalâjin* (*Z. d. M. G.*, xxxvi. p. 61), N.G. καλάι, Alban. *kalâj*—Arab. *q'alay*, Turk. *kalay*, Tat. *ckalai*, Tscher. *galai*, Georg. *kale*, *kalai*. The most widely distributed word in the Orient for "tin" (*cf.* Klaproth, *Asia Polygl.*, pp. 97, 122; Miklosich, *Türk. Elem.*, p. 87). Its origin is to be looked for in the name of the town *Qualah* in Malacca, the principal mart for tin in the Middle Ages (Tomaschek, *L. f. o. Phil.*, i. 125). In the ninth century it was "a rendezvous for caravans trading from East and West Asia" (Heyd, *Geschichte des Levantehandels*, i. 37). From now on the great stores of tin in Further India seem to make their appearance for the first time in the history of the world.

5. Osset. *išdi* (Klaproth, p. 89)—Cagat. *źeś*, Alt. *jes*, Mong. *dzes* (*cf.* Vámbéry, *Primitive Cultur.*, p. 175), "lead."

6. Gipsy *sjscha*, Sans. *sîsa*, "lead."

7. Kurd. *kurguschum*, Afg. *kourghâchem*, Osm. Bulg. *kuršum*, Alb. *koršum*, M.G. κουρσούμι—*ḳuršun*, Cag. *ḳurgaśun*, Alt. *korgožin*, Mong. *chorgholtsin*, "lead" (*cf.* Vámbéry, *op. cit.*, p. 175, and Miklosich, *Türk. Elem.*, p. 101).

8. Hindustani *mulwa*, Gipsy *molliwo*, (Pott, *Et. F.*, i.[1] 113, and *Zigeuner*, ii. 456), Mod. G. μολύβυι?

Various Sanskrit words for lead and tin, *cf.* Pott, *Etym. Forsch.*, ii. p. 414, *f.*, and R. Garbe, *Die indische Mineralien*, pp. 36, 37. A

* According to Garbe (*Die ind. Mineralien*, p. 37, note 1), the Sans. *rañga*, which usually means "colour," may possible "under the influence of the Bengal alphabet" come from *vañga*, "Bengalese" = "tin." According to this, tin was imported into Hither India, which was poor in the metal, from Bengal.

later name for lead *yavaneshta* ("treasured by the Yavana Ionians") is interesting.

This concludes the series of the six metals known to more remote antiquity. To these was gradually added in the fourth and third century the knowledge of zinc and quicksilver. The former, first mentioned in the passage of Pseudo-Aristotle quoted above (*cf.* p. 201), was designated by the Romans by the words *cadmea*, *cadmia*, borrowed from the Gr. καδμεία, καδμία, and is perpetuated in the Romance language, Span. Port. *calamina*, Fr. *calamine* (*cf.* O. Weise, *Griechische W. im Lateinischen*, pp. 154, 365). The German *zink*, which appears for the first time in the fifteenth century (*cf.* Kopp, *Geschichte der Chemie*, p. iv. p. 116), is obscure; the O.H.G. *zinco* ("a white speck in the eye") has been suggested (*cf.* O. Schade, *Altd. Wörterb.*, s.v., *zinke*).

Quicksilver is first mentioned by Theophrastus as χυτὸς ἄργυρος, "liquid silver" (*cf.* Kopp, *op. cit.*, p. 173). The expression ὑδράργυρος for the quicksilver artificially prepared from cinnabar (*cinnabari* = κανναβάρι) appears later. The Romans also distinguished between *argentum vivum* and *hydrargyrus*, "silver water." Both words in Latin then became the models for most names for quicksilver in the languages of Europe and Asia Minor (*cf.* Pott, *Z. f. d. Kundedes M.*, iv. p. 263). But to trace the subject further is not part of the object of our work.

CHAPTER X.

ANCIENT INDO-EUROPEAN NAMES OF WEAPONS.

Thus far we have endeavoured to ascertain how far back an acquaintance with metals goes in the history of the Indo-Germanic peoples, and have obtained the result that copper alone was known to the primitive period. We may now approach the question—What importance had this metal for the culture of the primitive age? And, since the metallurgic powers of a people are first utilised for the manufacture of weapons, we hope that a review of the most important ancient Indo-Germanic names for weapons will give us safe ground for deciding this question. "What weapons were known in the primitive period?" and "What light is cast on the nature of ancient Indo-Germanic weapons by their names?" These are the two main points of view by which we shall guide ourselves in the following statement.

A comparison of the Hindu-Persian languages, to begin with, shows the existence in this group of a not inconsiderable number of common names of weapons. They are:—

(1) Bow.....Sans. *dhánvan* = Zend *thanvare* (?).
(2) Bowstring..Sans. *jyá* = Zend *jya* (βιός); *cf.* also Sans. *snâvan* = Zend *snâvare* (νεῦρον).
(3) Arrow.....Sans. *ishu* = Zend *ishu* (ἰός).
(4) Weapon....Sans. *vádhar* = Zend *vadare*.
(5) Sling.....Sans. *áçan* = Zend *asan* (ἄκων).
(6) Spear.....Sans. *ṛshṭí* = Zend *arshti*, O. Pers. *arshtis*.
(7) Pike.....Sans. *çúla* = Zend *sûra*, O. Pers. σίπας· μαχαίρας, Hesych.
(8) Sword.....Sans. *así* = O. Pers. *ahi* (*ahifrashtâd*, "punishment with the sword"?).
(9) Knife.....Sans. *kṛti* = Zend *kareta*.
(10) Axe.....Sans. *tíjas* = Zend *taêzha*, and Sans. *takshan* = Zend *tasha*.
(11) Club.....Sans. *vájra* = Zend *vazra*.

A glance at these equations shows that in the way of purely defensive armour there is no correspondence. It is also remarkable that in the Rigveda the defence of the shield does not yet seem to be known, or at any rate is not mentioned, and is only

rarely employed* in the Avesta (*spâra* = Mod. Pers. *sipar* (f.); cf. W. Geiger, *Ostiran. Cultur*, p. 444). Again, the names for "cuirass" differ. The Vedic *várman* still has in the Avesta the perfectly general meaning of "covering, defence" (*e.g.*, the body as the covering of the soul). Old Iranian expressions are *vâçtâhman*, *kavaêm* (from the same root as *várman*), *zrâdhâ*, *khâriz*. Of these *zrâdha*, Parsi *zreh*, N. Pers. *zirah*, Kurd. *zirî*, *zirkh*, &c., if correctly derived from the root, *zeḍ*, "to clank" = Sans. *hrâd*, seems to point direct to the employment of metal. *Zrâdha* is obviously the iron coat of mail or scales which the Persians wore on their invasions of Greece (*κιθῶνας χειριδωτοὺς ποικίλους λεπίδος σιδηρέης ὄψιν ἰχθυοειδέος*, Hdt., vii. 61). Nor is a common word for helmet (the side-pieces of which, however, *çipre*, are mentioned in the Rigveda) forthcoming. The Sanskrit expressions *çirastrâṇa*, *çirastra*, *çîraska*, *çirsharaksha*, &c. : *çiras* and *çîrshán*, "head," like Zend *sâravâra* : *sâra*, "head," are apparently of recent origin. Zend *khaodha*, "helmet," Pehl. *khôdh*, N. Pers. *khâi*, Osset. *khode*, Armen. *koyr*, which is common to the Iranian languages, meant originally the pointed Iranian cap as is shown by the Old Persian name for a portion of the Scyths, *Çaka Tigrakhaudâ*, "Pointed-Caps," and from Hdt. (vii. 64): *Σάκαι δὲ οἱ Σκύθαι περὶ μὲν τῇσι κεφαλῇσι κυρβασίας ἐς ὄξυ ἀπηγμένας ὀρθὰς εἶχον πεπηγυίας* (cf. Hübschmann, *Z. d. M. G.*, xxxvi. p. 133; Spiegel, *Keilinschr.*², p. 221; Tomaschek, *Central Asiat. Stud.*, ii. p. 76). In contrast to this tiara worn by the infantry, the Persian cavalry in the Persian wars wore bronze and iron helmets (Hdt., vii. 61 and 84); they are also mentioned in the Avesta (*ayôkhaodha*). Zend *ránuyâna*, "leg-protectors" = "greaves" is not ancient.

In the way of weapons of offence the first rank in the equipment of a Vedic warrior is taken by the bow.† It is therefore praised with enthusiasm by ancient singers (cf. Rigv., vi. 65. 1 and 2): "Like to the thunderstorm is it when the warrior rushes into the midst of the fray. May the broad cuirass protect thy body; march on to victory unscathed. May the bow bring us spoils and oxen, may the bow be victorious in the heat of the fight; the bow fills the foe with terrible fear, may the bow give us victory over the world."

The bow, like the bow-string, has, as we have already seen, identical names in Sanskrit and Persian. But even with the arrow differences begin. In the Rigveda two kinds of arrow, an older and a more recent, are distinguished: "That which is of stag-horn and is besmeared with poison, and that the mouth of which is bronze." (*ákṛikta yâ rúruçṛishṇy átho yásyâ áyo múkham*,

* The Sans. (non-Vedic) *sphara*, *spharaka*, "shield," according to T. Nöldeke —*Ueber ein mittelarisches Fremdwort persischen Ursprungs im Sanskrit* (*Sitzungsb. d. Ak. d. Wiss. zu Berlin*, 1888, ii. 1169)—is a loan, though of tolerably ancient date, from Mod. Pers. *sipar*.

† Sans. *dhánvan*. Just as O.N. *álmr*, the "bow of elm-wood," *ýr*, that "of yew," G. τόξον, perhaps = Lat. *taxus*, so Sans. *dhánvan*, the "bow of fir" (= O.H.G. *tanna*, Dutch *den*, **dhen-ven*).

Rigv., vi. 75. 15; *cf.* Zimmer, *Altind. Leben*, p. 299), which latter kind the Hindus carried at the time of the Persian wars: Ἰνδοὶ—τόξα καλάμινα εἶχον καὶ ὀιστοὺς καλαμίνους, ἐπὶ δὲ σίδηρος ἦν (Hdt., vii. 66). Linguistic agreement is exhibited by the two peoples in only one term for arrow, that is Sans. *íshu* = Zend *ishu* (ἰός), Pamir D. *wašú, wešú, wišú* (Tomaschek, p. 69), which, of course, originally designated the older sort (*cf.* Sans. *ishurdigdhá*, "poisoned arrow"). The other Hindu and Persian names for arrow, *çárí, çárya, báṇa*: Zend *tighri*, N. Pers., &c., *tír* (*cf.* Justi, *Handw.*, and P. de Lagarde, *Ges. Abh.*, p. 201), *ayôaghra*, have nothing to do with one another. There is, however, yet one Iranian term for arrow which deserves special notice, that is *asti*, literally "bone" (ὀστέον, *os*), as Pausanias expressly states of the Sarmatæ, (i. 21. 5): ὀστείνας (*cf.* Zend *asti*) ἀκίδας ἐπὶ τοῖς ὀιστοῖς and ἐπὶ τοῖς δόρασι αἰχμὰς ὀστείνας ἀντὶ σιδήρου φοροῦσι.* According to Herodotus, Persians, Medes, and Scyths came to the fight armed with bow and arrow.

In addition to bows and arrows, there was the sling-stone in the way of missiles (*cf.* further, Ved. *ádri* by the side of *açan*). This was used by the Hindu-Persian heroes quite as much as by those of Homer, in the times of which we have knowledge. It was either launched by the mere strength of the arm (*asánô aremôshûta*, "sling-stone hurled by the arm") or by means of artificially constructed slings (Zend *fradakshana*; *cf.* W. Geiger, *Ostiran. Cultur*, p. 446). Hand to hand fighting was begun by means of the lance, with which the Hindu-Persian period was familiar (Vedic *ṛshṭí, çáru*, &c., Zend by the side of *arshti* = Sans. *ṛshṭí*, *sura* = Sans. *çúlá*, and also *dâuru* (δόρυ), *dru, aṅhva, arezazhi*.†

After what has been said about the arrow, it is clear that in the case of the lance there is no question of anything but a horn or stone head, as we cannot imagine that any people used metal for the latter without also using it for the former.

The primeval and dreaded weapon for fighting at close quarters among the Hindus and Iranians is the club (*vájra* = *vazra*, *vádhar* = *vadare*), which might be used for throwing or for hitting. It is with the club that Indra performs his heroic exploits, and that the "club-bearer" (*vajrín, vájrabâhu, vájrahasta*) smites the monster *vṛtrá*. In the Avesta also the gods, especially Mithra, appear armed with it. *Keresâspa*, the Iranian hero of prehistoric times, has the epithet *gadhavara*, "club-bearer" (*cf.* W. Geiger, *op. cit.*, p. 444, *f.*), and even in Firdusi the hero carries his *gurz* (= *vazra*) at his side (*cf.* P. de Lagarde, *Ges. Abh.*, p. 203).

* In the north-east of Europe, which was exposed to the influence of Iran, numerous bone arrow-heads have been found (*Mitteil. d. Wiener Anthrop. Ges.*, ix. 75), whereas in the west of our quarter of the globe flint prevails. The form also of the two species is quite different.

Metal arrow-heads, especially those of bronze, like the bone missiles and sling-weapons of the Palæolithic age, frequently display arrangements for the reception of poison (communicated by M. Much).

† According to W. Geiger (*Ostiran. Cultur*, p. 46) *arezazhi*, "the conqueror in the fight," denotes not the lance but the bow.

The sword also must be ascribed to the primitive Hindu-Persian period, because of the equation Sans. *así* = O. Pers. *ahi* (Lat. *ensis*), and even to the Indo-Germanic period because of Lat. *ensis* and G. *ἄορ*. But everything indicates that originally this word meant nothing more than "fighting-knife," as Böhtlingk and Roth assume for the Sanskrit word. In the frequently quoted passage of Herodotus (vii. 61, *f.*), where the historian holds a review of the troops of nearly all Asia and Africa, none of the peoples is mentioned as carrying *ξίφη*, it is always *ἐγχειρίδια*, "short knives." The Persians in particular wear *ἐγχειρίδια* in the girdle at the right side. Whether the Scytho-Persian *ἀκινάκης* (Hdt., iii. 118, 128; iv. 62; vii. 54) is only the Persian name for this *ἐγχειρίδιον*, or means something more, cannot be made out. In the same way the Sans. *así* (O. Pers. *ahi*) is undoubtedly identical with the ancient Iranian expression *kareta* (= Sans. *kṛti*), which can be used "of the surgical knife of the physician as well as of the dagger" (*cf.* W. Geiger, *op. cit.*, p. 449). The *kareta* is made of bronze—on one occasion *ayaṅh* actually = *kareta*—and is doubled-edged. As the Iranians made the acquaintance of iron at an early period (*cf.* above, p. 203), this metal also may have soon come to be employed. At any rate, the wide distribution of the Iranian word (N. Pers. *kârd*, Kurd. *ker*, Osset. *khard*, Pamir Dialects *čêd*, *čîd*, *čît*; Tomaschek, p. 69) in the north, partly in the meaning of "sword" (O.S. *korŭda*, N. Slav. *korda*, Croat. *korda*, Serv. *korda*, *čorda*, Lith. *kárdas*, Pol. *kord*, Alb. *kordŭ*, Magyar *kard*, Macedo-Romun *κοάρντα*), partly in the sense of iron (*cf.* above, p. 210), shows quite clearly that the dagger must have been the principal weapon of the Iranian tribes.

Finally, the axe, the battle-axe, is a weapon beloved by the Hindu-Persian peoples for close fighting. In the Vedas it is called *svádhiti*, *paraçú*, the genuine Scytho-Persian expression is *σάγαρις*, a word which Herodotus (ii. 61) translates as *ἀξίνη*, "axe." The attempt sometimes made to connect this word with O.S. *sekyra*, *sěkyra*, which is primevally related with Lat. *sec-are*, *sec-ūris*, is phonetically impossible. On the other hand, another name for axe has certainly travelled north from Iranian territory to the Slavs and Finns. Pers. *tabar*, *tabr*, Baluči *towâr*, Pamir D. *tipár*, recurs not only in nearly all Slav languages (O. Russ. *toporŭ*, &c.; Miklosich, *Türk. Elem.*, p. 1), but also in Hungar. *topor*, Tscher. *tavár*, &c. (Ahlqvist, p. 30).

According to Tomaschek (*Central Asiat. Stud.*, ii. p. 67), Mordv. *uzere*, *uzyr*, "axe," Liv. *vazâr*, Esth. *wazar*, &c., are derived from Iranian dialects (Wakhi *waǧak*, &c., "axe, bored iron").

Again, the Armenians appear as a rule to be dependent on Persia for the names of their weapons (cf. *zên*, "weapon" = Zend *zaêna*, *zrah*, "cuirass" = Zend *zrâdha*, Mod. Pers. *zirah*, *salaüaṛt*, "helmet" = Zend *sâravâra*, Syr. *sanvartâ*, *tapaṛ*, "axe" = N. Pers. *tabar*, *têg*, "lance" = N. Pers. *tēγ*, "sword," Zend *taêgha*, *aspaṛ*, "shield" = N. Pers. *sipar*, *soüṛ*, "sword" = O. Pers. *σύρας* (*cf.* above, p. 210), *nizak*, "spear" = N. Pers. *nêza*, *dažnak*, "dagger" = N. Pers.

dakna, paikandayān, "quiver" = N. Pers. *paikān*, "arrow" + *dān*, "arrow-holder." The Armenian *net*, "arrow," is originally connected with Sans. *naḍá*, "reed." Arm. *mahan*, "shield," may perhaps be compared with Osset. *mart*, "shield." Zend *vereθra* (*Z. d. D. M. G.*, xxxviii. 732). Arm. *aleln*, "bow," is obscure.

In southern Europe we are struck by the total divergence of Greek and Latin as regards the names of weapons. Compare:—

Cuirass, *θώρηξ* – *lorica*.
Helmet, *κόρυς, πήληξ, τρυφάλεια, κυνέη, κράνος* – *cassis, galea*.
Greaves, *κνημῖδες* – *ocreae*.
Shield, *ἀσπίς, σάκος, λαισήϊον*, "targe" – *scutum, clypeus*.
Lance, *ἔγχος, ἐγχείη, δόρυ, ξυστόν, μελίη* – *hasta, veru, verriculum, pilum*, &c.
Sword, *ξίφος, φάσγανον, ἄορ* – *gladius, ensis*.
Bow, *τόξον, βιός* – *arcus*.
Arrow, *οἰστός, ἰός, βέλος* – *sagitta*, &c.

Indeed, in the catalogues of Greco-Italian words, with the exception perhaps of *actis, -ātis* = *ἀγκύλη, ἀγκυλίς*, "javelin-strap, javelin," in the case of which borrowing is not out of the question (*cf.* O. Weise, *Griech. W. im Lat.*, p. 75; Saalfeld, *Tensaurus*, p. 11), there is scarcely an equation which can correctly be placed here. It is, therefore, all the more remarkable and striking to observe (*cf.* above, p. 130) the far from inconsiderable number of points in which Greek agrees with the Hindu-Persian languages. They are mainly as follows:—

Bow, *βιός*	= Sans. *jyā*, "bow-string."
Arrow, *ἰός*	= Sans. *íshu*.
Lance-head, *ἀθήρ*	= Sans. *atharí*.
Javelin, *κῆλον*	= Sans. *çalyá*.
Javelin, *κέστρος*	= Sans. *çastrá*.
Spear, *δόρυ*	= Zend *dāuru*.
Sling-stone, *ἄκων*	= Sans. *áçan*.
Axe, *πέλεκυς*	= Sans. *paraçú*.
[Razor, *ξυρόν*	= Sans. *kshurá*.
Spindle, *ἄτρακτος*	= Sans. *tarkú*.
Ploughshare, *εὐλάκα*, Lac.	= Sans. *vṛ́ka*.]

Further, the Greeks and the Hindu-Persians have a common word for the "fight" and fighting (Sans. *yudh*, Zend *yud* = *ὑσμίνη*). It is, however, manifest, that here too there is no common name for any kind of defensive weapon. The Greek names for such a weapon obviously originated on Greek soil, and display everywhere traces of barbaric age.

The shield on the one hand is simply called "hide," "leather." Thus *σάκος* (*ποδηνεκές, ἀμφίβροτον*): Sans. *tvac*, "hide, skin;" Hom. *βοῦς, βόη* is "steer" and "shield," *ῥινός*, "hide" and "shield." Again, I am inclined to include here the *γέρρον*, which appears for the first time in Herodotus, and indicates a light shield woven of withies and covered with ox-hide, and to compare *γέρρον* (**γερσ-ο*)

with Sans. *gṛsh-ṭi*, "cattle," and O.H.G. *chursina*, "peltry-ware" (cf. *kürschner*). Finally, πέλ-τη, "shield," and πάλ-μη, "shield" (Hesych.), attach themselves without difficulty to πέλμα, "sole," Lat. *pellis*, Goth. *-fill*, or perhaps also to Sans. *varman*, "leather," "shield" (**ger-*).

On the other hand, the shield is named after the wood of which it is made. Thus ἰτέα is the "willow" shield made of withies (cf. ἰτέα, "willow"). So, too, ἀσπίς, synonymous in Homer with σάκος, seems to me to belong to ἄσπ-ρο-ς, ἄσπ-ρι-ς, "a kind of oak" (cf. also ἄσκρα : O.N. *askr*, "ash"). The attempt made by Bezzenberger in his *Beiträge* (i. 337) to connect G. ἀσπίς with Lith. *skỹdas* is scarcely tenable. Θυρεός (: θύρα), a "door-shaped" shield, is used by later writers, particularly in reference to Celtic armour. The fundamental meaning is simply "door-board."

The cuirass, Hom. θώρη, seems to correspond to the Sans. *dhāraka*, which, however, has still the general meaning of "receptacle." Again, the names for the helmet are specifically Greek; κόρυς and κράνος can scarcely be separated from κάρα, "head" (see above, p. 222); κυνέη (: κύων) is originally a can of dog-skin; though, even in Homer, we find κυνέη χαλκήρης or πάγχαλκος by the side of κυνέη ταυρείη, κτιδίη, αἰγείη (cf. above, Zend *ayôkhaodha*).

Amongst weapons of offence, the club (ῥόπαλον : ῥάπις, ῥῶπες, κορύνη : κράνος, "coral-wood"?) survives into Homeric times. With it the Greek national hero Heracles performs his exploits. Like the club of the Cyclops Polyphemus (*Od.*, ix. 378), it was, according to Theocritus (xxv. 208), made from a wild olive (ἐλαίνεον). With it Orion hunts wild beasts in the nether world (*Od.*, xi. 572), and Ereuthalion, the club-bearer (κορυνήτης), slays young Nestor (*Il.*, vii. 136); but it seems to have disappeared from Homeric battles.

Again, the bow (βιός, τόξον = *taxus*, "yew") no longer forms a regular part of the armour of the Homeric hoplite. Still there were peoples, like the Locri, of a lower stage of civilisation who "had come against Troy relying on the bow and the well-twisted flock of wool" (cf. *Il.*, xiii. 713, *f.*). How completely the bow served as the principal weapon in prehistoric Greek times, however, is best shown by the example of Heracles, who even in Hades meets Odysseus :—

> γυμνὸν τόξον ἔχων καὶ ἐπὶ νευρῆφιν ὀιστόν,
> δεινὸν παπταίνων, αἰεὶ βαλέοντι ἐοικώς.
>
> (*Od.*, xi. 607).

Again, the barbarous custom of besmearing the arrow-head with poison (ἰοὺς χρίεσθαι) is once mentioned in the *Odyssey* (i. 260), and perhaps the G. ὀϊστός, for which as yet no satisfactory etymology has been found, may mean "the poisoned," sc. ἰός, "arrow," being possibly derived from *ο-Fισ-τός (Lat. *virus*, Sans. *vishá*, "poison" = *Fισ-ος, ἰός).* The stone (λίθος, χερμάδιον) which the Homeric heroes were still accustomed to hurl has been mentioned.

* ὀϊστός = *sṃ-vis-tó*. ο = *sṃ* is to be regarded as in ὄ-πατρος, ὄ-ζυξ.

The lance is, as regards the shaft, of the polished (ξυστόν : ξέω) wood of the oak (δόρυ) or ash (μελίη). Other names for the lance also reveal a similar origin: κράνεια is "the cornel" (: κράνος), and the lance fashioned from its wood; αἰγανέη (cf. μηλέη, "apple-tree," πτελέη, "elm") is really "oak-tree" (O.H.G. *eih*), then the "oaken lance" (cf. *K. Z.*, xxx. 461); finally, I venture to compare ἔγχος, ἐγχείη with ὄγχ-νη, "the cultivated," and ἀχ-ράς, "the wild pear-tree" (*engh-*, *ongh-*, *ngh*), since the wood of this tree, which, in the Peloponnese especially, is frequent, is readily employed for carving.

The lance-head, αἰχμή, corresponds to Lith. *jeszmas*, "roasting-spit," Pruss. *aysmis*. As to its manufacture, language reveals nothing directly; though the scene in the *Odyssey*, in Polyphemus' cave, shows how rapidly and simply a serviceable point might be obtained, in a non-metallic age, by burning. Another old Greek word which is guaranteed by the tragedians and Herodotus, though not by Homer, is λόγχη, which enjoys a wide though not altogether intelligible circle of relations. On the one hand, the word seems to be connected with the Semitic (Hebrew, *rômah*, Orig. Sem. *rumhu*: cf. Bezzenberger's *Beitr.*, i. pp. 274, 291, and above, p. 44), and on the other with the Lat. *lancea*, which denotes a long, light spear provided with leather straps, and is used particularly of Celtic and Iberian weapons (cf. Diefenbach, *Origines Europ.*, p. 372). Perhaps, however, the explanation of λόγχη is something much simpler. If one calls to mind expressions such as ξυστόν, sc. δόρυ, lit. "polished," and reflects that one of the most striking characteristics of the primitive (see below) as well as of the Homeric spear is its length (ἔγχος ἑνδεκάπηχυ, πελώριον, μακρόν, μέγα, δολιχόσκιον), the conjecture is suggested that λόγχη (: Lat. *longus*) is nothing but "the long," sc. μελίη, though it would be remarkable that this word should survive nowhere else in Greek.

The old Greek ξίφος, "sword," which from the excavations in Mycenæ (cf. Schliemann, *Mycènes*, p. 561, *f.*, and Helbig, *Hom. Epos.*[2], p. 322, *ff.*), seems to have had a length of about ¾ to 1 metre, and which was originally in Schliemann's opinion sharply distinguished from the much shorter φάσγανον, "dagger" (φάσγανον from *σφάγανον : root σφαγ ?), has the epithets τανυήκης, ὀξύς, μέγας, στιβαρός, ἀμφήκης, "two-edged," χάλκεος, κωπήεις, &c., and forms the most important and valued of the Greek hopelite's weapons. As to the explanation of this word there are two conflicting views, one which connects ξίφος with Indo-Germanic words, to wit O.H.G. *scaba*, "plane," O.N. *scafa*, "scraper" (ξίφαι, Hesych.; cf. A. Fick, *Wörterb.*, i.[2] p. 808; Curtius, *Grundz.*[5], p. 699); the other, which derives the Greek word from Oriental languages, Æg. *sefi*, Arab. *seif-un*, &c. (cf. F. Müller, *Beiträge*, ii. pp. 490–49; A. Müller in Bezzenberger's *Beiträge*, i. p. 300). I confess that the latter view seems to me the more probable. In any case it is noteworthy that

* Fick in Bezzenberger's *Beiträge z. Kunde d. indog. Spr.*, i. p. 34, connects ἔγχος with root ἐγχ = νεχ, "to stand," O.S. *nizą*, *nisti*, "penetrare," *nožĭ*, "knife" (?). Cf. author, *B. B.*, xv. 285.

at Hissarlik not a trace of swords has been found in any of the seven prehistoric towns, a circumstance which Schliemann construes as a proof of the length of time that separates Homer's poetry from the conquest of Troy (cf. *Ilios*, p. 539; *Troja*, p. 103). Moreover, ξίφος, at any rate in Homer's language, is wholly without derivatives, and was not originally used in the formation of proper names, whereas the words for lance, ἔγχος, and especially αἰχμή, are often employed for this purpose. I am, therefore, of opinion that the Greeks inherited from prehistoric times nothing but a short dagger (ἄορ = *asi*, Lat. *ensis*), which, like the old-fashioned word ἄορ, was gradually driven out by the long and certainly metal ξίφος imported from Asia.

For the rest, the excavations at Hissarlik show us how far into the age of metals, in any case, the Stone Age survives with its hammers, axes, hatchets, saws, and pounders of stone, and its needles and awls of bone and ivory. Gladstone (*Homer and the Homeric Age*, p. 48), therefore, is not so far wrong in thinking that by axes and hatchets (ἀξῆναι, πελέκεες), with which the rank and file fight, for instance, round the ship of Protesilaus (*Il.*, xv. 711), there may have been many an implement of stone.

In Italy, the transition from the age of stone to the age of metals can still be traced tolerably clearly. Whereas, in the pile-dwellings of Lombardy, stone weapons and implements are by far the most numerous, the manufacture of bronze shows considerable advance in the settlements south of the Po, and that of stone implements a decline. On ground demonstrably Latin a stone weapon has never yet been found (*cf.* Helbig, *Die Italiker in der Poebene*, pp. 25, 91). Now as the population of the Peninsula by Italian tribes undoubtedly proceeded from the north to the south, we can see advance in the manufacture of bronze keeping pace with the gradual approach to the culture of the Mediterranean district.

The most ancient and sacred weapon in Italy is the spear, from whose Sabine name, *curis* (*cf.* above, p. 184), Quirinus and the Quirites were supposed to derive their appellation, and which, preserved in the Regia on sacred ground, was (Plutarch, *Romulus*, 29) worshipped actually as Mars, like the Scythian ἀκινάκης. Ancient Latin words for the spear are *hasta* (Lat. *hastatus* = Umbr. *hostatin*) : Goth. *gazds*,* "sting," the heavy lance of the Servian phalanx, *contus* (G. κοντός, Saus. *kunta* ; *cf.* J. Schmidt, *Verwandtschaftsverh.*, p. 62), *veru* (Lat. *veru* = Umbr. *berva* "*verua*," *cf.* Bücheler, *Lex. Itol.*, x. : O.I. *bir*, "sting"), *pilum* (ἰσσός), the javelin of the Roman legions, perhaps of Etruscan origin, as the iron portion of a javelin has been found amongst old Etruscan weapons

* This comparison (Brugmann, *Grundriss*, i. 373), however, does not explain the *o* of the Umbrian forms *hostatu*, *hostatir*. If *h* is regarded, not unusually, as unfounded etymologically (for the Umbrian *cf.* Bücheler, *Umbrica*, p. 182), then Lat. *hasta* (**rsta*) may be compared with Sans. *ṛshṭi*, Zend *arshti* (above, p. 222); cf. *fastigium* from **farstigium*, &c. (Schweizer-Sidler, *Gr.*², p. 68).

(*cf.* J. Marquardt, *Römische Staatsverwaltung*, ii. pp. 318, 328), but linguistically identical with Lat. *pilum*, "pestle" (: *pinso*). Lance-heads are found commonly both in the pile-dwellings of the Po district and in the necropolis of Alba Longa.

On the other hand, in both places—and this fact forms the best confirmation of what we have said above as to the G. ξίφος—there is an almost complete absence of weapons "which correspond to the ordinary notion of a sword," (Helbig, *op. cit.*, pp. 20 and 78; *cf.* however, p. 135). The dagger-like knives found in the pile-dwellings, originally called, we may assume, *ensis* (*asi*), a word which, subsequently found refuge in poetical diction exclusively, never exceed 15 centimetres. in the length of their blades. In ancient Rome, again, there are not wanting traces of the rarity with which swords were used (*cf.* Helbig, *op. cit.*, p. 79). The proper Latin expression for sword is *gladius*, a word which after the Second Punic war denoted the relatively short, two-edged, pointed Spanish sword, which at this period was taken over by the Romans, but seems, before the time alluded to, to have been the name of a longer weapon, similar to the Gallic sword (*prælongi ac sine mucronibus*, Livy, xxii. 46).

If one assumes that the initial sound of the Latin word was weakened (Schweizer-Sidler, *Lat. Gr.*[2], p. 54), the **cladius* thus obtained from *gladius* is connected by unmistakable affinity with O.I. *claideb*, *claidbene* (**cladivo* (?); cf. *fedb*, "widow," from **vidhevā*). It may, however, then be doubted whether we have here a word primevally related in Celtic and Italic (*cf.* also O.H.G. *helza*, A.S. *helt*, "hilt," **keld*), or an early loan from Celtic to Latin, since the Romans were perpetually carrying on a lively exchange of weapons with other peoples. Perhaps, under the circumstances, the latter is the more probable; and, then, the Romans would bring with them from the primeval period only *ensis* (= *asi*), for which *gladius* was substituted in consequence of their contact with the Gauls of North Italy.

As *gladius*, however, drove the old *ensis* out of use, so *gladius* again was superseded in the mouths of the people by a word *spatha*, which, in the Imperial period, found its way to Rome from Greece (σπάθη), designating a broad, two-edged sword, and which has passed into nearly all the Romance languages (Span. *espada*, Fr. *épée*), and also into German (O.H.G. *spato*, M.H.G. *spaten*), &c. (*cf.* Diefenbach, *Orig. Europ.*, p. 422, and Die[illegible] *Etym. W.*[4], p. 301).

The bow and arrow,* in common use among the inhabitants of the northern Italian pile-dwellings, have quite fallen into the background in the equipment of the Servian army, and even the body of light-armed *rorarii* only use the javelin and the sling imported from Greece (*funda*: σφενδόνη), not the bow. It was only later

* *Arcus* and *sagitta*. The latter is altogether obscure. The former recurs in Goth. *arhvazna*, "arrow" (**argo*). In connection with what has been said above with regard to Sans. *dhánvan*, O.N. *almr* and *fr*, G. τόξον, we may think of the German tree-names *arfe*, *arve* (*pinus lembra*); *cf.* author, *B. B.*, xv. 290.

that this weapon again became familiar to Rome in the hands of the auxiliaries and allies.

In the way of defensive armour the name of the shield here too is a very primitive one. Lat. *scūtum* (θυρεός), originally the long, rectangular shield of the Samnites, undoubtedly belongs to the (f. σκῦτος (κάτος) "hide, leather" (*cf.* σκῖκος = Sanscr. *tvac*, &c.). *Clipeus, clipeus* (ἀσπίς) is the round, bronze shield, with which in the Servian army citizens of the first class were armed, while the second and third carried the *scūtum*. As the round bronze shield is obviously of Tuscan origin (M. Jähns, *Handbuch d. Gesch. d. Kriegswesens*, p. 196), perhaps the word which designates it is also; at any rate, no satisfactory explanation for *clupeus* is forthcoming.

The impression made on the Italian farmers by the introduction of the metal shield, which was strange of course to the pile-dwellers, may be recognised, as Helbig rightly remarks in *Die Italiker in der Poebene*, p. 78, in the myths connected with the *ancilia* of the Salii. "A bronze shield," so it was said, "fell from heaven or, sent by the gods, was found in the regia of Numa." In order that the gift of heaven might not be carried off by enemies, Numa caused the smith Mamurius to make seven other shields exactly like it; which, together with their archetype, served as the equipment of the twelve Salii. *Parma* = πάρμη is of unknown origin; *cetra* = καίτρεα (*cf.* Diefenbach, *Orig. Europ.*, p. 294) is obviously a barbaric word.

For the helmet there are two Latin expressions: *cassis, cassidis*, for the metal helmet which was first of bronze, and then, from the time of Camillus (Plutarch, *Camill.*, 40), iron; and *galea* for the helmet of leather (κυνέη). The former takes us to an original form **cat ti*, and connects itself accordingly with the Teutonic, O.H.G. *huot* (also "helmet"), A.S. *hætt*, &c.; to the second, *galea*, which appears as a loan-word in O.S. *galija*, and, indeed, in nearly all Slav languages (*cf.* also M.H.G. *galle*, the O.H.G. *hulja, hulla*, "covering for the head"), is said to correspond. The latter is phonetically very improbable. I should prefer to connect the Latin *galea*, in its older forms *galear, galerus, galerum* with the Greek γαλέη, γαλῆ, "weasel," as Dolon in the *Iliad* (x. 334) wears a κυνέη κτιδέη, *i.e.*, a cap of weasel-skin.

The corslet *lorica*, a word that of course has nothing to do with θώρηξ, is originally a leather collar, *i.e.*, a series of straps (*lora*) of sole-leather fastened one on the other. "Lorica quod e loris de crudo corio pectoralia faciebant: postea subcidit Gallica e ferro sub id vocabulum, ex annulis ferrea tunica," *Varro de L. L.*, v. 116. *Thorax* and *katapharactes* are Greek. The *ocreæ* (κνημῖδες) finally were, if rightly connected with Lith. *aũklė* (Fick, *Wörterbuch*,[3] ii. p. 34),* originally straps for the foot.

If, therefore, on classic soil neither the *παναπλία* of the Homeric hero, nor the brilliant armour of the Roman legionary, has been

* The stem-verb is Lith. *aũ-ti*, "to pull on shoes." Lat. *ō-crea* could only belong here if it originated from **u-crea* (*ind-eo*) or **ō-crea*.

able to conceal from us traces of the primitive warrior's equipment, how much more numerous may we expect the survivals from the primeval period to be which we shall encounter the moment we set foot on the territory of the northern peoples, the Celts, the Teutons, and the Slavs.

Down to historic times the only piece of defensive armour here is the shield, the northern names for which are: L. *sciath*, Teut. Goth. *skildus*, O.H.G. *scilt*, &c., O.S. *skiđa*, Lith. *skýdas*. Of these, O.S. *skiđa* (whence O. Fr. *escutum*) and O.I. *sciath* go back to a fundamental **skeito*, which corresponds to O.H.G. **scît*, O.N. *skíđ*, "log-wood;" while M.H.G. *brët* and A.S. *bord* combine the meanings of "board" and "shield." As regards the fact, compare the statement of Tacitus, *Ann.* ii. 14: "Ne scuta quidem ferro nervoque firmata sed vimineum textus vel tennes et fucatas colore tabulas." The shield of the north is the great, broad, rectangular *scutum* (θυρεός) covering the whole man; round shields are only ascribed as exceptions to the eastern peoples by Tacitus (*Germ.*, 43). It was either withy-work (G. *lréa*) with a covering of leather (Tac., *Ann.*, ii. 14), or consisted of thin boards of yew (O'Curry, *Manners and Customs*, i. p. cccclxv), alder (I. *fern*, "shield": *fernog*, "alder;" Windisch, *I. T.*), or linden (O.H.G. *linta*, A.S. *lind*, "shield"). The outside was usually painted a bright colour (Tac., *Germ.*, 6). Next to red, white was particularly affected. White shields were carried by the Cimbrian cavalry (Plutarch, *Mar.*, 15); in the Hildebrandslied, father and son have *hwitte scilti*. *Finden*, an Irish name for shield (*cf.* Windisch, *I. T.*, p. 550), is obviously to be derived from *find*, "white." Another term, very widely distributed in the northern languages, for the great shield that covered the whole body is It. *targa*, Span. Port. *tarja*, Fr. *targe*, O.N. *targa*, *törgu-skiöldr*, A.S. *targe* (O.H.G. *zarga*, "shelter"), Cymr. *tarjan*, I. *targat*, "targe," a word unfortunately of doubtful origin (*cf.* Diez, *Etym. W.*, p. 315). Metal fittings in the way of buckles, rings, &c., were only employed in later times in the north to give a better hold on the shield.*

Very slowly, though still it may be discerned to some extent in language, did the custom of protecting the body from the missiles of the enemy by means of close-fitting armour spread through the north, despised as it was at first by barbaric courage. The Celts beyond a doubt borrowed their term for corslet from the Lat. *lorica*, I. *luirech*, Cymr. *lluryg* (*cf.* Stokes, *Irish Glosses*, p. 53, and Windisch, *I. T.*, s.v.), just as the collective term for Roman armour (*arma*, "defensive armour" in particular: *tela*) has passed into Irish (*arm*; Windisch, *I. T.*). The leather collar denoted by the I. *luirech* held its own against metal armour for an exceedingly long time. Cuirasses of seven well-tanned ox-hides, and so on, are frequently mentioned in Irish texts (cf. *Manners and Customs*, i. p. cccclxxiv). Another Irish expression for armour is *conganchness*, which Sullivan is inclined to derive from *congan*, pl. *congna*,

* Goth. *skildus* and Lith. *skýdas* have not yet been explained.

"horn," and to see in it a name for the horn cuirass ascribed by Tacitus (*Hist.*, i. 79) to the Quadi and others.*

On the other hand, the continental Gauls, to whom Pliny expressly ascribes the independent discovery of metallurgy (*Hist. Nat.*, xxxiv. 17), may have effected the transition to bronze or iron corslets at an early period. According to Tacitus (*Ann.*, iii. 45) the Gauls had men actually covered with iron (*ferratis*), who are styled by the enigmatical word *crupellarii*. According to Diod. (v. 30), the Gauls even in the time of Cæsar had iron and actually golden armour.

When Tacitus wrote, corslets were rare amongst the Germans (*Germ.*, 6), or as good as wanting (*Ann.*, ii. 14). The extensive equipment which Plutarch (*Mar.*, 25) ascribes to the Cimbri must have come either from foreign booty or from the imagination of the writer. The whole of the east seems to have been indebted to its contact with the Celtic west for its knowledge of the cuirass. Goth. *brunjô*, O.H.G. *brunja*, A.S. *byrne*, O.N. *brynja*, O.S. *brunga*, *bronja*, and also O. Fr. *brongne*, *brunie*, Prov. *bronha*, Middle Lat. (813) *brugna*, probably go back to the Celtic-Irish *bruinne*, "breast," as Germ. *panzer*, M.H.G. *panzier*, O. Fr. *panchire*, Span. *pancera*, P. It. *panciera*, come from It. *pancia*, Span. *panza*, &c., "paunch," (*pantex*). So, too, M.H.G. *harnasch*, O.N. *hardneskja*, O. Fr. *harnas*, Fr. *harnois*, Span., &c., *arnes*, It. *arnese*, in the last instance come from Celt. I. *iarn*, Cymr. *haiarn*, &c., "iron," (*cf.* Diez, *Etym. W.*, 26; Thurneysen, *Kelto-rom.* 36, *f.*). Our tolerably modern word "cuirass" belongs to Fr. *cuirasse* in the first instance, and then to Prov. *coirassa*, Span. *coraza*, It. *corazza*, literally "leather vest" (*coriam*); *cf.* Diez, *op. cit.*, p. 108. Terms for the cuirass native to the Teutons are O.H.G. *halsperga*, A.S. *healsbeorg*, O.N. *hálshiorg* (Fr. *haubert*), and Goth. *sáiwa*, A.S. *searo*, O.H.G. *gisarwi*, which latter makes its appearance in the Lith. *sárwa*, and rather connotes the complete suit of armour. For the rest, the Old German *brinne* can only mean the leathern collar. It was only gradually that people learnt to sew iron rings or scales on it, and to add to the *brinne*, in its special sense of cuirass, the *brynstókar* (sleeves) and *brynglofar* (gauntlets), &c. (*cf.* Weinhold, *Altn. Leben*, p. 210, *f.*).

The Σκλαβηνοί and Ἄνται, according to Procop. (*De bell. goth.*, iii. 14), were entirely unprovided with cuirasses: "In battle the majority fight on foot with small shields and javelins, absolutely without cuirasses, some even without tunic or cloak, save for a fragment round the hips and loins."

In the same way the rarity of the helmet in the north is demonstrated by unimpeachable historic evidence (*cf.* Baumstark, *Anz. f. Erläut.*, i. p. 331). Here, too, the way for the iron helmet was paved by the leathern cap, or the woven helmet of leather or wood, which Herodotus knows amongst Asiatic peoples (vii. 79).

* An interesting description of the manufacture of horn cuirasses from horses' hoofs (ὁπλή) by the Sarmatæ, from whom the Quadi probably (*cf.* Ammianus Marcellinus, xvii. 12) may have learned the art, is given by Pausanias (i. xxi. 6).

The Celtic names for the helmet (*cf.* I. *cath-barr*, *at-clnic*, &c.) have no connection either with Latin or Teutonic. On the other hand, the Teutonic words, Goth. *hilms*, O.H.G., A.S., O. Sax. *helm*, O.N. *hjálmr* (= Sans. *çárman*, "defence"), exhibit remarkable agreement, not only amongst themselves, but also with the O.S. *šlěmŭ*, O. Russ. *šelom*, from which, again, as a loan-word the Lith. *szálmas* is derived (Brückner, *Die Slav. Fremdw.*, p. 140). Fick (*Wörterb.*, ii.[3] 697), and Miklosich (*Et. W.*) conjecture that the agreement between the Slav and the Teutonic languages is again due to borrowing on the part of the Slavs; in any case, however, language points to the existence of a primeval covering for the head, however barbaric, amongst the Slavs and Teutons.

Coming now to weapons of offence, we find that here too, as in the south, the bow has fallen into the background, and that it has taken refuge with the nomad tribes of the east (Tac., *Germ.*, 46). It has, however, nowhere entirely disappeared (*cf.* Holzmann, *Germ. Altert.*, p. 145), and the ancient Slavs (Σκλάβοι καὶ Ἄνται) are credited by the strategic writer Mauricius (*cf.* Müllenhoff, *Deutsche Altertumsk.*, ii. 37) with the use of the wooden bow and small poisoned arrows. The bow is made of the wood of the elm or yew, and is therefore called simply *álmr* or *ýr* in Norse (*cf.* above, p. 222, note, and p. 229, note). Horn bows, too, are forthcoming, as in Homer (*cf. Il.*, iv. 105), among the Huns. That the north was acquainted with the bow from primeval times is demonstrated by the far from inconsiderable number of common expressions for it and its arrows. Thus, in Old Irish, there is a name for arrow, *sliubarcu* (*cf.* O'Curry, *Manners and Customs*, i. p. ccccliii, *f.*), the second part of which, *-arcu*, obviously corresponds to the common Teutonic name for arrow, O.N. *ör*, G. *örvar*, Goth. *arhvanza*, A.S. *earh*, as also to the Latin *arcus*.* That this was the arrow with its original horn or stone head, such as we have the evidence of history to show was used by the Sarmatæ (Paus., i. xxi. 2), the Huns (Ammianius Marcellinus, xxxi. ii. 9), the Æthiopians (Hdt., vii. 69), is intrinsically credible because of the large number of such arrows that have been found in Celtic and Teutonic soil, and is rendered probable by the fact that in both groups of languages the old-fashioned word was driven out by new terms borrowed from abroad, obviously in order to designate the arrow with an iron head. Thus, in the Celtic languages, the Lat. *sagitta* makes its appearance in I. *saiget*, *saiged*, Cymd. *saeth* (*cf.* Stokes, *Irish Glosses*, p. 57), while the Teutonic languages have appropriated the Lat. *pîlum* in O.H.G. *phîl*, *pfeil*, A.S. *pîl*, Scand. *pîla*.

Other equations, which seem to be due to original connection of the words, are, in the north, O.H.G. *strâla*, "arrow" = O.S. *strěla*, Lith. *temptyva*, "bow-string" = O.S. *tętiva* (Fick), Lith. *lankas*, "bow" (Kurschat *liñkis*, "bow-line") = O.S. *ląkŭ*, &c. It is phonetically impossible for the Old I. *túag*, "bow," to correspond, as

* *Cf.* above, p. 229, note. The transition in meaning from "bow" to "arrow" is paralleled in M.H.G. *vliz*, *flitsch*; Low G. *flits*, "arrow," It. *freccia*, Span. *frecha*, *flecha*, Fr. *flèche*, &c. (*cf.* Diez, *Etym. W.*[4], p. 147).

Pictet (ii.² p. 77) will have it, to the G. τόξον (*taxus*). It, however, has not yet been explained.

The club survives in northern antiquity rather in story than in real life. Nevertheless, as an irregular weapon, it is widely distributed (*cf.* Weinhold, *Altn. Leben*, p. 204). In the time of Tacitus it was still the principal weapon of the Æstyi (the Lithu-Prussians; *cf.* Tac., *Germ.*, 45: *rarus ferri, frequens fustium usus*). Again, the *cateja* of the ancients (*cf.* Diefenbach, *Orig. Europ.*, p. 287) seems to have been a club-like weapon in use amongst the Celts and Teutons.

On the other hand, another important species of weapons, which not only serves at close quarters to strike the foe to the ground, but also, when boldly hurled, hits the enemy from a distance, has continued in active use in the north—battle hammers, axes, and hatchets. The first in particular, the stone hammer, is very closely interwoven with the religious conceptions of the Indo-Europeans. From the hand of the German god of the thunderstorm fly now arrows, now clubs, now hammers; Indra hurls the *áśman* (Rigv., iv. iii. 1; i. xviii. 1. 9), Zeus the ἄκμων (Hes., *Theog.*, 22). The Teut. O.N. *hámarr*, O.S. *hamur*, A.S. *hamor*, O.H.G. *hamar* is etymologically connected with Slav. *kamenĭ*, "stone" (*cf.* above, p. 160). Further, we have direct historic and linguistic evidence to show how long stone continued to be used for the manufacture of the weapons mentioned. In the battle at *Magh Tuired* (*Manners and Customs*, i. p. ccccl vii), certain warriors were armed "with rough-headed stones held in iron swathes." In the Hildebrandslied the stone axes (*staimbort chlúdin*) clash as the young heroes fall on one another. And even at the battle of Hastings (1066): "Jactant Angli cuspides et diversorum generum tela, sævissimas quoque secures et lignis imposita saxa" (*Manners and Customs*, i. p. ccccl ix): "Nay! even at the end of the thirteenth century stone axes were wielded by the Scots whom William Wallace led against the English" (Helbig, *Die Italiker in der Poebne*, p. 43). Common terms for the things in question are the Europ. *áśmn* [Lat. *ascia*?], Goth. *aqizi* (Fick, *Wörterb.*, i.³ p. 180), and O.S. *młatŭ*, "hammer" = Lat. *mart-ulus* = (from **malt-ulus*); O.I. *biáil* = O.H.G. *bîhal*,* O.H.G. *barta*, "axe" (cf. *staimbort*) = O.S. *brady*; O.H.G. *dehsala*, "axe" = O.S. *tesla* (Lith. *teszlyczià*); Lith. *kúgis*, "hammer" = O.S. *kyj*; O.S. *młatŭ*, "hammer" = Lat. *martellus* (?); O.P. *wedigo*, "axe" = Lith. *wedegà*, Lett. *wedga*, &c. It is remarkable that with the exception of the Frankish *francisca* (*cf.* Diefenbach, *Orig. Europææ*, p. 345) the ancients tell us little about these weapons of the northern Indo-Europeans; though on archæological monuments the axe or hatchet is the regular attribute of barbaric peoples (*cf.* V. Hehn, *Culturpflanzen*⁶, p. 503).

I pass by the manifold use made, especially in Old Irish warfare (*Manners and Customs*, i. p. ccccl vi, *f.*), of stones, shaped and

* Windisch, however, would (*Kurzgef. Irische Gramm.*, p. 114, note) regard both words as loans from the Romance languages; *cf.* It. *piallia* (?). *Cf.* now Thurneysen, *Kelto-Romanisches*, p. 84, *f.*

unshaped, in order to proceed to the two principal pieces of northern offensive armour, the spear and the sword.

The northern spear is originally the tremendous, long (*enormis, ingens, prælonga*) shaft of ash-wood (μελίη, O.N. *askr*, "lance;" in the Hildebrandslied, too, fighting is done *ascim*), which is polished (O.N. *skafinn*, ξυστόν) and provided either with a bone or stone head, in place of iron, or hardened in the fire (*telum præustum*, ἀκόντον ἐπίκαυτον). Even among the Germans of Tacitus, although they possessed the *framea* which was provided with a small and short iron head (*Germ.*, 6), only the first rank in the fights with Germanicus had real spears, the rest had shafts hardened in the fire (Tac., *Ann.*, ii. 14).

Amongst the many northern terms for the various kinds of spears—many of which have been handed down to us by the ancients themselves—see the articles ἄγγωνες,* *cateja*,† *framea, gesum, mataris, lancea, sparus*‡ in Diefenbach's *Origines Europææ*—none is so interesting as the Teutonic O.H.G. *gêr, kêr*, A.S. *gâr*, O.N. *geir*, with *azgêr, atgâr, atgeir*. No one will doubt that these words must be connected with the Irish *gai, ga*, "spear," which, according to the laws of the language, goes back to an original form **gaisos* (*cf.* Stokes, *Irish Glosses*, p. 57), and in that form appears as a loan-word in Lat. *gæsum* and G. γαῖσος (*cf.* Diefenbach, *Orig. Europ.*, p. 350, *f.*). Some scholars, as Fick (*Wörterb.*, ii.[3] 784) and Kluge (*Et. W.*[4]), are inclined to extend the equation I. *gai*, O.H.G. *gêr* still further, and to compare Sans. *hêshas*, to which it may be objected *a limine* that the Sans. word, according to B. R., means not "arrow" (as Grassmann takes it) but simply "wounding," and such a change of meaning as from "wound" to "lance," or the reverse, can scarcely be demonstrated.

As for the relation of the Teutonic and Celtic words, there is no phonetic criterion forthcoming to settle with certainty whether they are primevally related or borrowed one from the other. If, however, one reflects that the spear is the earliest and commonest weapon ascribed to the Celtic tribes, and that it is expressly described as of iron (Diefenbach, *loc. cit.*, p. 352), I think it is most probable that the Teutons, who obtained their first knowledge of iron from their Celtic neighbours (above, p. 209), borrowed the name of the iron spear from the Celts at the same time as they borrowed the name for iron, *i.e.*, at a time when the intervocalic *s* was still retained in Celtic. How early this was is shown by the employment of the stem **gaiso* in Teutonic proper names (O.H.G. *Gêrhart, Gêrtrût*, &c.).

In passing I will call attention to a weapon, allied to the spear, to which the Celts and the Teutons gave the same name, that is the German *sturmgabel* ("charging spear"). In Irish it is *gabul*,

* ἄγγωνες, "spear with barbed points": O.H.G. *ango*, "sting," *angul*, "fish-hook" = G. ὄγκος, "barbed hook."

† *Cateja*: I. *cath*, "fight" (?).

‡ *Sparus* may be genuine Latin. In any case it is connected with O.H.G. *sper*, O.N. *spjor*. *Cf.* M.H.G. *sperbaum*, "service-tree" (*æsculus*?).

gablach, gabalca (cf. *Manners and Customs*, i. p. cccclvi), which corresponds fairly well with the German *gabel*.

Finally, we still have left some Slavonic names for the spear: O.S. *kopije, sulica*, and *lašta*. The first, perhaps, belongs to G. κόπτω; *sulica* from **su-dlica* (*cf.* Čech. *sudlice*) may be a *nomen instrumenti*: O.S. *su, sunąti*, "push," whence also Sans. *çū-la* has (above, p. 222) been derived. Lastly, O.S. *lašta*—which can scarcely be borrowed from Lat. *lancea* (Krek², p. 151)—in my opinion is from **lontja*, and is connected with Orig. S. **lontu* (Less. Russ. *łut*, "twig," Wr. *łut*, "bark of a young lime-tree," Russ. *lutie*, "forest of limes for bark;" Miklosich, *Et. W.*); which is primevally related with O.H.G. *linta* (Lat. *linter*, "canoe of lime-wood," G. ἐ-λάτη), and may itself have originally meant "lime-tree." We should then here again have a tree-name furnishing, as is so often the case, a name for the spear, and get the rather interesting evolution of meaning:—

O.H.G. *linta*, "lime-tree" (G. ἐλάτη).	O.H.G. *linta*, "shield," from "lime-wood."
	Lat. *linter*, "bark," from "lime-wood."
	O.S. *lašta*, "spear," from "lime-wood."

Compared with the spear, the sword in the north is a young weapon. This, however, does not apply to the Celts of Gaul, to whom, as ample evidence shows (*cf.* A. Holtzmann, *German. Altertümer*, p. 140), swords were known at a very early time (*cf.* also above, p. 229, on *claideb*). But of the Germans, Tacitus (*Germ.*, 6) expressly says *rari gladiis utuntur*, and Germanicus (*Ann.*, ii. 14) dwells on the advantages which the Romans with their short javelin and swords had in woody country over the Germans with their shields and spears.*

This *raritas gladiorum*, however, seems to have been greater amongst the western than amongst the eastern Teutons; for that metal swords, owing to the influence of Persia, found their way early into the east of Europe, is shown first by the extremely wide distribution of the Iranian *kareta* in the sense of "dagger, sword" (*cf.* above, p. 210), and next by the express tradition of the ancients. It is to the eastern Teutons that Tacitus ascribes (*Germ.*, 43) *breves gladii*. According to Strabo (c. 306) the Roxolani, a Sarmatic tribe, possessed not only helmets and corslets of raw hides (ὠμοβοΐνος) but also ξίφη. According to Tacitus (*Hist.*, i. 79), they were so great that they needed both hands to manage them. Müllenhoff (*Monatsberichte d. Berliner Acad. d. Wissens.*, 1886, p. 571) would like to see in the word Σαυρομάται itself "the blade-bearers" (Zend *saora*, "blade"). These statements certainly seem to be inconsistent with what Pausanias says (i. xxi. 8), that

* When Dio Cassius (xxxviii. 49) makes the Germans of Ariovistus armed with swords both large and small, we must reflect that they had been for many years on Celtic territory. Of the swords of the Cimbrian cavalry (Plutarch, *Mar.*, 25), the remark that we have already made of their cuirasses and helmets holds good (*cf.* above). *Cf.* Baumstark, *Ausführl. Erläut.*, i. p. 307.

the Sarmatæ were absolutely without metals (Σαυρομάταις γὰρ οὔτε αὐτοῖς σίδηρός ἐστιν ὀρυσσόμενος οὔτε σφίσι ἐσάγουσιν).

A word for sword common to Celts, Teutons, and Lithu-Slavs, or to any two of these branches, is not to be found. The equation O.S. *mĭčĭ* = Goth. *méki*, A.S. *mece*, O.N. *mækir*, according to Miklosich (*Die Fremdw. in den slav. Sprachen*), is due to the Slavs borrowing the Teutonic word, the origin of which, however, has not yet been explained (*cf.* also Krek, *Einl.*², p. 150).

It is, however, certain that several northern words for the sword are derived from names for knife—the stone knife. The classic example of this is the Teutonic O.N. *sax*, O.S. *sahs*, A.S. *seax*, O.H.G. *sahs*, "short sword," words which etymologically belong to the Lat. *saxum*, "rock, stone." Again, this word is transmitted to us in the compound *scramasaxus* by the mediæval historians, and from it the Saxons got their name (*cf.* also Förstemann, *Altdeutsches Namenbuch*, i. p. 1065). The first part of the word *scramasaxus* is derived by Diefenbach (cf. *Orig. Europ.*, p. 418) from the Old High German form of the Modern German *schramme*, which, however, as *scrama* by itself is the name of a weapon, is very improbable. May we possibly see in *scrama* the Latinised form of the O.N. *skálm* (*cf.* also Thracian σκάλμη), "knife, sword" (?).

Of the same origin as the Teut. *sahs* is the Slav. *nožĭ*, "knife, sword," which, according to Fick (*Wörterb.*, ii.³ p. 592), is connected with Pruss. *nagis*, Lith. *titnagas*, "flint" (Krek², p. 152, disagrees), Goth. *hairus*, O.S. *heru*, A.S. *heor*, O.N. *hjörr*, "sword," corresponds to Sans. *çáru*, "arrow," and must, therefore, have stood for some Indo-Germanic weapon (but what?). A.S. *bill*, O.S. *bil* (not to be confused with *bîhal*, "axe") is obscure. Compared with such formations, A.S. *îren* (frequent in Beowulf), "sword," literally "iron," and, therefore, parallel to Zend *ayanh* (*cf.* above, p. 224) and G. σίδηρος (ἐφέλκεται ἄνδρα σίδηρος), is relatively young.

Otherwise, how late the manufacture of metal swords was amongst the Teutonic peoples is shown not least conclusively by the custom mentioned above (p. 168) of giving them proper names, which obviously points to the great scarcity of this kind of weapon.

Having thus travelled over the whole Indo-Germanic area, we will by way of conclusion cast a glance at the Finnic east, and enquire whether the dependence shown by the West Finns on their civilised neighbours in the matter of the names of metals can be paralleled at all in the names of weapons. As a matter of fact it can. The oldest piece of information preserved to us (Tac., *Germ.*, 46) about the Fenni states with regard to their weapons as is well known: "Non arma . . . . . vestitui pelles . . . . . sola in sagittis spes, quas inopia ferri ossibus asperant." This statement of the historians is amply confirmed by a linguistic examination of the West Finnic names of weapons (*cf.* the material collected by Ahlqvist, *Die Culturwörter in den westfinnischen Sprachen*, pp. 237–41). In Finnic armour, whenever it becomes probable that metal was employed, the words cease to be genuine. There are

accordingly native terms for the bow (Finn. *jousi*), arrow (*nuoli*), and quiver (*viini*). To quite late times the Finns were famous in the north as masters in the art of archery (*cf.* Weinhold, *Altn. Leben*, p. 206). There is also a genuine name for corslet, Finn. *luusto*, from *luu*, "bone," doubtless designating a corslet made of bone. On the other hand, the iron corslet has a borrowed name (*pantsari*, *harnáska*, Lith. *bruñna*). The name for the shield also is borrowed (*kilpi* : O.N. *hlíf*), and of the sword (Finn. *miekka* : O.N. *mækir*, *kalpa* : Swed. *glaf*, *korti* : Russ. *kortika*), and of the iron spear (Finn. *keihäs* : O.N. *geir*, or *kesja*), while the genuine expressions for pike (Finn. *saitta* and *tuuppi*) still have the original meaning of "rod, pole." The knife (Finn. *veitsi*) has a genuine name. For the axe Finnic has borrowed names (*kirves* : Lith. *kirwis*, *tuppara* : Russ. *toporŭ*, *cf.* above, p. 224, *partusan* : Teut. *bard*, *barðisan*, "*hellebard*), whereas other closely connected languages have genuine names for it.

"The only explanation for this fact in Finnic," says Ahlqvist, "is to suppose that the Finns also had a special name of their own in earlier times for the stone axe, and that later when they began to get iron axes in the way of commerce from their more civilised neighbours, they adopted the foreign name along with the foreign implement."

Reviewing the state of things pictured in this chapter, we find that defensive armour, such as helmet, corslet, greaves, &c., must have been absolutely unknown to primeval Indo-European times. Not even the shield has a name universal and identical throughout. None the less, this obvious means of protecting the body from the enemy's missiles must have been amongst the earliest pieces of defensive armour, only perhaps its primitive nature was so simple that expressions like "leather" or "board" sufficed to designate it for a long time.

Amongst offensive weapons we find in the oldest times the bow and arrow, the club, the sling-stone, the lance, and the axe, and finally, a short fighting-knife probably—simple weapons, which as countless excavations teach us could very well be manufactured without any metal whatever. As a matter of fact, plenty of linguistic and historic evidence shows that the so-called Stone Age continued long into historical times in numerous places in the area covered by the Indo-Germanic peoples.

As for the origin of the names given to the weapons, we saw that they were very frequently taken from the material out of which the weapons themselves were made. This was first and foremost wood, then stone, bones, and leather. Names of weapons derived from the metals were late and rare. It might, indeed, be alleged against this argument that as, *e.g.*, G. *μελη* undoubtedly designated the ashen spear with point of iron, something similar may have been the case in the primeval period. But this objection loses its force when we see that the ashen lance, simply burnt to a point, continued in use amongst the northern peoples into historic times.

I am, therefore, of opinion that the names of weapons simply confirm the conclusion previously obtained, viz., that the primeval Indo-European period was in essentials in a stage of culture antecedent to metals.

Whether, and how far, in addition to non-metallic materials, copper—which was known to the primitive period, and was first worked not by the hammer of the smith but by smelting, casting, and moulds—was employed cannot be decided either by language or history. Anyhow, we may admit the possibility that this probably very rare and precious metal may in isolated cases have been employed, in the manner just described, in the manufacture of weapons, perhaps especially in making the Indo-Germanic fighting-knife * (*enses*).* But it must always be borne in mind that the state of things depicted in this chapter would be inconceivable if copper in the principal period had possessed any sort of predominating metallurgic importance.

* Pure copper dagger-blades from the most diverse quarters of Europe are now known. *Cf.* the Tables of Copper Finds in Much, *loc. cit.*, p. 59.

Prehistoric stone knives consist, according to a letter from Much, of prismatic flint-flakes as a rule 5 to 10 (occasionally more than 20) centimetres long with two more or less parallel edges, and are adapted only for cutting not for thrusting or digging. On these grounds I think, the equation *asi-ensis* is the earliest in which one can suspect the employment of metal, *i.e.*, copper. Though *cf.* above on *sahs*.

PART IV.

THE PRIMEVAL PERIOD.

πολλὰ δ' ἂν καὶ ἄλλα τις ἀποδείξειε τὸ πάλαιον Ἑλληνικὸν ἡμιώτροπα τῷ νῦν βαρβαρικῷ διαιτώμενον. (Thuc., i. vi. 4.)

CHAPTER I.

INTRODUCTION.

The preceding discussion on the appearance of the metals, especially amongst the Indo-Germanic peoples, has we hope smoothed the way for a sound and methodical conception of the primitive Indo-European age. We have amply explained above that the appearance of metals and the gradual advance in the knowledge of working them opens a new world of culture to man. Consequently we must, now that it has been shown that the oldest Indo-Europeans were not yet practically acquainted with metals or metallurgy, proceed to modify our conception of the culture of the primitive age, to correspond with the condition of a society which lacks those powerful levers of civilisation.

A living picture of such a society has been put before our eyes in Europe by the lake-dwellings of Switzerland, in which the oldest remains go back to the Stone Age, when metals were unknown. And, as is well known, in spite of this ignorance of metals we have here a population, low indeed in the scale of evolution, but by no means troglodytes. The lake-dweller of the Stone Age knew how to fell mighty trees with his stone axe; he drove them with much skill and labour into the bottom of the lake, and on them erected his wooden huts. He had already domesticated the most important tame animals, cows and sheep, goats and dogs. He had even begun agriculture: he grew wheat and barley, and even flax, which he had learnt to spin and weave in a primitive way. Stone, bone, horn, and wood take the place of the later metals in the manufacture of axes, hatchets, knives, arrow-points, lances, fishing-hooks, &c.

The student, who on the strength of the evidence of language denies that the Indo-Europeans before their dispersion were ignorant of the metals, must necessarily be of the opinion (cf. above, p. 28) that the Swiss lake-dwellers, at least those of the Stone Age, did not belong to the Indo-European family. We, however, are in a different position. It is, therefore, worth our while to enquire since we have established two important negative points of agreement between the civilisation of the prehistoric Indo-Europeans and that of the oldest lake-dwellers, whether we cannot also discover some positive points of agreement between them.

However, apart from the obvious importance of such a comparison for our knowledge of the prehistoric period of the peoples of our quarter of the globe, it were to be wished that Philology, having to do with primeval matters from the point of view of language, would turn her eyes as often as possible from her books to the actual remains of the primeval period which have been preserved in our soil; for only thus will it be possible for her to give life and blood to the often unsubstantial phantoms of her combinations, and to select the right meaning out of the many which linguistic phenomena are capable of bearing. That it may not seem as though we allowed ourselves to be prejudiced by the results of archæology in our reconstruction and conception of the primeval Indo-Germanic period, it will be well to endeavour, in the following chapters (i.–x.) to infer the material civilisation of the Indo-Europeans from the other material at our disposal and without reference to archæology; and then in a special chapter (ch. xi.) to discuss the relation of the picture of primitive culture thus obtained to that which the laudable toil of anthropologists in our quarter of the world has brought bodily to light.

As before, so now, we shall start from the results of Comparative Philology, with the design of utilising them in accordance with the principles already enunciated in the second part of this book. But with this only half of our task will be done. Above all things it will be our endeavour to recover in the pages of actual history traces of the primitive mode of life which we have been led to infer from the evidence of language. Comparative Philology—such was the result of all our discussion of the subject of method—in investigating the primeval history of the Indo-Europeans must have at her side a science of Comparative Antiquities.

The function of such a science, as yet existing but in embryo, is to ascertain by comparing the antiquities of the individual Indo-Germanic peoples the stock of culture inherited from the primeval period by all Indo-Europeans. Such a statement would be extremely obvious, and consequently very superfluous, did it not look as though the error which has now happily been expelled from the region of Comparative Grammar, the mistake that is of imagining that all linguistic phenomena were preserved in their original form in Sanskrit, is likely to be repeated in the field of Comparative Antiquities. It is either tacitly assumed or frankly avowed that

the most correct course is to picture the culture of the Indo-Europeans to ourselves as just like that of the ancient Indians. The Veda is the beginning and the end of all knowledge.

Such a view, however—even if it proved eventually to be, as I do not believe, wholly or partially correct—is fraught with danger at the present stage of investigation, inasmuch as it bars the way to an unprejudiced observation of the development of the culture of the other Indo-European peoples. Hardly less serious is it, in my opinion, arbitrarily to select a group of two or more peoples for the purpose of comparing their antiquities, when Comparative Philology has not as yet given the least countenance to the supposition that they are intimately connected. For it is obvious that what is supposed to have been ascertained to be the common inheritance of such peoples carries with it very serious consequences for the rest of the Indo-Europeans. It is undoubtedly right to compare the antiquities of Hindus and Persians, or of Slavs and Lithuanians, with each other. But in my opinion it is a source of inevitable error to separate the Greeks and Italians, or the Hindus, Greeks, and Italians, from the rest of the Indo-Europeans, as has been done, and treat them by themselves with a view to ascertaining the stock of culture jointly inherited by them from primeval times. All three peoples at the very beginning of their records appear before us as occupying what, compared with the North European branch of the Indo-Germanic family, is a relatively high stage of moral and material civilisation. But Italy for five hundred years before had been exposed to the influence of Greek colonies, Greece for about the same length of time to the civilising stimulus of Phenician commerce. The agreements of the two countries in the possession of certain pieces of material civilisation, or of customs and conceptions important in the history of culture, may well be the outcome of borrowing from abroad, on the part of the Greeks from the Phenicians, of the Italians from the Greeks; and, indeed, that this is the case in countless instances is demonstrable and matter of fact. Again, the question whether and how far ancient India has been subject to the action of West Asiatic culture has by no means yet received its final solution.* But leaving on one side the idea of extensive borrowing from abroad, which thrusts itself upon us, is it not in the highest degree probable that three peoples so nearly akin to each other, when once they had entered on the path of a higher civilisation, developed the seeds of culture jointly inherited by them from the primeval period in directions new indeed but resembling each other, so that now they look as though they had had one and the same historical origin? I should be inclined to think that what K. Brugmann (above, p. 72) has said as to the casual nature of the coincidences to be found between certain individual groups of Indo-Europeans in the case of linguistic phenomena, applies also to the domain of the history of culture.

* *Cf.* on this point recently O. Gruppe, *Die griechischen Kulte und Mythen*, pp. 171–80.

Thus we have already seen that even the Vedic warrior hastens to the field armed with helmet and cuirass; and does so on a lightly built fighting chariot, drawn by swift horses. The same picture is presented to us by the Homeric poems, and even the Roman warrior is not without artistic metal armour of defence as far back as the most ancient times.

Nevertheless, we have been able to demonstrate above that the original Indo-Germanic language possessed no expression for this latter conception; and amongst the Indo-Germanic tribes of the north of Europe we find the primitive stage of armour, thus inferred, still faithfully preserved. We shall also subsequently see (ch. iii.) that in the warfare of this early period it is impossible to imagine that fighting chariots were employed. It is obvious, therefore, that we have in all these cases to do with advances in culture made by the peoples in question—the Indians, Greeks, and Romans—after their departure from the original home, either by their own unaided efforts or in consequence of external stimulus, or both. No connection can be traced back to primeval times between the armour of the Græco-Romans and the Hindus, or between the fighting chariots of the Greeks and Hindus.

In this connection what is true of the material culture of the Indo-Europeans is equally true of their moral and religious culture. We may draw an example of this from two works already mentioned by us (*cf.* above, p. 142) by B. W. Leist, his *Græco-Italische Rechtsgeschichte*, and his *Altarisches* (*i.e.*, however, only Indo-Græco-Italian), *jus gentium*, which, though full of matter and of thought, contain conclusions with reference to the primeval period that must be seriously called in question. One of the most important ideas running through this book is that the conceptions designated as *ṛtá* and *dhárman* by the Indians, the former of which comprehends the mundane and earthly order of things, the latter a divine law made known by the lips of the priests, come down from the primeval, ancient Aryan period. If, to begin with, we examine the linguistic foundation for this view, and, according to Leist, as we have already seen, it must "always be the core of the proof," we find that it is extremely suspicious.

The equation θέμις : Sans. *dhárman* we have already spoken of above, p. 141. We must altogether give up the connection of the Sans. *dhárma* with the probably Elian gloss of Hesychius, θέρμα, "truce of god," as the ρ of this word to all appearance stands for σ (*cf.* Paus., v. 15. 4: *τὸν μὲν δὴ παρὰ Ἠλείοις Θέρμιν καὶ αὐτῷ μοι παρίστατο εἰκάζειν ὡς κατὰ Ἀτθίδα γλῶσσαν εἴη θέσμιος*).

Remains then the Indian *ṛtá*, which Leist (following Vaníček) compares both with Lat. *rātus*, *rātio*, and also with Lat. *ritus*. That the latter is quite impossible needs not here to be proved. Unfortunately, however, the equation Sans. *ṛtá* = Lat. *rātum*, *rātio* is at least very disputable. Sans. *ṛtá*, "right, straight," "order," and *ṛtú*, "period of time," belong, according to B. R., to the root *ar*, "to rise, go, obtain" &c., so that the original meaning may well have been "course," "in the right course," from which the conception,

of order might easily have been developed (*cf.* Sans. *ēva*, "course" = O.H.G. *ēwa*, "law"). But how this root *ar*, to which in Greek ὄρνυμι corresponds, and in Latin *orior*, could produce a *rātus*, *rātio*, which further can hardly be dissociated from *reor*, *rātus sum*, I at least am unable to see.*

Leaving this linguistic foundation we have still the agreement of the two ideas in point of meaning, and if we compare the Indian *ṛtá* with the Latin *rătio*, *rătum* in that respect, one must admit that the comparison is a striking one in many points, assuming, that is, that with the Indian conception one compares the spiritual content which the whole of Latin literature, ancient and recent, associates with *rătio*, *rătum*—or in the course of centuries has imported into it; for that the same extent or depth of connotation which later philosophers and still later jurists, have assigned to these words was present in the brains of the peasants who inhabited the Apennine Peninsula, or even of the priests who accompanied them, is an assumption, the probability of which needs to be demonstrated not taken for granted.

As for the *dhârma-θέμις-fas* conception, is it not in this case also a very natural thing that three lofty, closely related peoples should, when their belief in the gods had assumed a purer form, independently come to regard certain precepts, such as that honour is due to one's elders or to guests, as expressions of the will of the immortals? Leist assigns this proceeding to the primeval period. But how do we know for certain that the primeval period's conception of the gods was altogether an ethical one? May not the power of the forces of nature in the primeval period have been conceived rather as supernaturally capricious than as divinely ordained?

And if we really assume that Leist has made the connection of all these conceptions probable, surely the objection then arises—Why do we find that in Teutonic, for instance, the primeval period of which we have as yet no right, as has already been remarked, to dissociate from that of the Indians, Greeks, and Romans, the *dhârma-θέμις-fas* conception has not been developed with equal clearness? In short, it seems to me, we have here exactly the same state of things as in the instance chosen above of the absence of armour amongst the northern peoples and the presence of the armoured warrior of the Veda, of Homer, and of ancient Rome. May not the explanation also be the same?

Perhaps in the present condition of our science it is not altogether possible to obtain indisputable results in the case of these final, most difficult, and most subtile questions as to the moral and religious life of our Indo-Germanic forefathers, until the nature of the material culture of the primeval Indo-Germanic period has been settled with some approach to certainty. Leist declines absolutely to consider this point (*Græco-It. Rechtsg.*, p. 9).

* These difficulties for the rest have been raised by Max Müller, who before Leist had thoroughly discussed the conception of *ṛtá* (cf. *Origin and Growth of Religion*, 1880, p. 246, *ff.*).

The unprejudiced observer, however, will say *a priori* that a people in the state of culture which Pictet assumes for the primeval period, and a barbarous tribe such as Helm sees in the Indo-Europeans (above, p. 34), must have different notions of law and right, and that in many cases the meaning of equations referring to a higher spiritual life amongst the Indo-Europeans will depend on which of these alternatives we decide to assume.*

The science of Comparative Antiquities then must be on its guard against making arbitrary excisions and incisions in the unity of the Indo-Germanic peoples; and in its endeavours to reconstruct the prehistoric past must pay no less attention to the primitive than to the higher layers of culture which may be proved to exist in Indo-Germanic soil.

We have already seen on p. 40, *ff.*, above, that there have not been wanting scholars who have sought to explain the contrast between these stages of culture by assuming that amongst the Indo-Germanic peoples, the Northern Europeans in particular declined from their former high level of civilisation in consequence of their trying migrations. This notion of the surrender of a culture once possessed; and of the lapse into savagery of tribes originally civilised, is indeed conceivable in itself, and can be proved to be actually true in certain special cases. But to picture the civilised career of whole peoples, and those Indo-European, as first a fall from and then a struggle up to higher planes of culture, is a mode of conception which to begin with is in direct opposition to all the scientific spirit of our century, accustomed as it is to regard the phenomena of life, in nature and in man alike, as exhibiting progressive evolution from lower forms to higher.

It loses all support, however, the moment it is proved that the traits of barbarism, which we encounter with especial frequency among the Northern Indo-Europeans, face us in the antiquities of the Indians and Iranians, the Greeks and the Romans, in the shape of survivals, which considered by themselves often seem incompre-

* As I have since seen, similar objections have been made against Leist from the juristic point of view. *Cf.* R. Loening, *Zeitschrift für die gesamte Strafrechtswissenschaft*, v. 553, *ff.*: "On the other hand the author has most overlooked the beginnings of law amongst the other Indo-Germanic peoples, especially the Teutons, who appear to him to stand in essential contrast to the Greeks and Italians because of the less fixed nature of their rites and ceremonies. In itself this is indisputable (*1*); but, on the other hand, it is to be observed that in the case of no people is the original state of things known to us on better evidence than in the case of the Teutons, and that consequently it is from them the relatively safest conclusions can be drawn as to the beginnings of Indo-Germanic law generally, and, therefore, indirectly as to the beginnings of Greco-Italian law in particular. By way of check at any rate the most ancient German conceptions of law must be indispensable for the knowledge even of Greco-Italian law.

"I will not, however, conceal the fact, that in my opinion to base the oldest Aryan notions of law on sacred and ceremonial conceptions, and to refer them to this origin, and, further, to ascribe to primeval times the comprehension of physical and legal order under one and the same idea, *rta* or *ratio* . . . . . is entirely without warrant. As regards the Latin word *ratum, ratio*, it certainly did not originally possess the meaning of 'fixed, immovable,' but only acquired it later by transference."

hensible or absurd, but which when taken in connection with related facts occurring amongst related peoples frequently afford us unexpected glimpses into the life and experience of prehistoric epochs, survivals of a barbarism which a Thucydides was not ashamed to recognise as such in so many words—they form the motto of this work—with the Parthenon or Athene Promachos of his native town before him.

It loses all support again the moment it is shown that the linguistic facts from which the picture of this Indo-Germanic paradise is drawn are capable of another interpretation, and one compatible with the teaching of history and of prehistoric research. A contradiction between language and (trustworthy) record of the past never occurs. Where it appears so to do, one or the other has been misunderstood. That this is really so has, we hope, been shown in numerous instances by our previous pages. The following will make a considerable addition to the number.*

By the "primeval Indo-European period" we understand particularly that prehistoric age in which the collective Indo-European peoples, still united to one another and distinguished from other peoples by the possession of essentially the same tongue and culture, together dwelt, or fed their flocks together, on what, relatively to their later geographical distribution, was a circumscribed area. What was the origin of this prehistoric Indo-European family of peoples, speech, and culture, what its previous history was, lies beyond the bounds of knowledge.

Only in rare instances shall we succeed in noting intermediate stages between this the most ancient age and the beginnings of the historical life of the individual nations. But it is just these intermediate stages that we hope will afford us some not unimportant clues to the solution of the last problem we have to deal with—that of the "Original Home of the Indo-Europeans."

We have narrated the history of this question in detail in the first part of this book. The casual observer may, perhaps, detect nothing in it but a tangled mass of contradictory and inconsistent hypotheses. The judicious eye, however, will discover advance even here. It shows itself, if nowhere else, at least in that the belief in the *a priori* necessity that the Indo-Europeans must have their origin in the interior of Asia—a belief to which even a Hehn could bow—may be regarded as exploded. Not less significant is it that gradually all sciences relating to the history of man are beginning to take their places with regard to this problem, and that therefore the one-sided and consequently prejudicial treatment of the problem by grammar has reached its end.

In the first edition of this book we still hesitated to give a decided answer to the question as to the original home of the Indo-Europeans. Now after nearly twelve years work on matters relating to the primeval history of our race we will venture on an attempt to solve this important problem.

* In many respects G. Krek's views on the subject of method in the *Einleitung in die slavische Literaturgeschichte* differ.

CHAPTER II.

THE ANIMAL KINGDOM.

Catalogue of Indo-Germanic Mammals—Lion and Tiger—Hunting—Indo-Germanic Names of Birds—The Dove, a Bird of Death—Right and Left—Hawking—The Eel—The Snake.

In the following pages our object is to ascertain particularly the fauna with which we must imagine the Indo-Europeans of the primeval period to have been surrounded. For the moment we shall not distinguish between the domesticated and the wild varieties; we must, however, even at this point take up the question what conclusion we can draw from the animal kingdom as known to the Indo-Europeans, about the geographical position of their original home. Again, incidentally we shall have to discuss some other of the relations, not without their importance for the history of culture, existing between the animal kingdom and man.

To begin with, the following list of Indo-Germanic mammals may be drawn up on the strength of the evidence of language:—

A. Carnivora.

1. The Dog: Sans. *çvā*, Zend *spā*, Armen. *šun*, G. κύων, Lat. *canis*, Goth. *hunds*, Lith. *szů*, Ir. *cú*.
2. The Wolf: Sans. *vṛ́ka*, Zend *vehrka*, Arm. *gail*, G. λύκος, Lat. *lupus*, Goth. *vulfs*, Alb. *ulk*, O.S. *vlŭkŭ*, Lith. *vilkas*.
3. The Bear: Sans. *ṛ́kṣha*, Pamir D. *yurš*, Arm. *arj*, G. ἄρκτος, Lat. *ursus*, I. *art*, Alb. *ari*.
4. The Otter: Sans. *udrá*, Zend *udra*, G. ὕδρος, O.H.G. *ōttar*, Lith. *ūdrà*, O.S. *vydra*.
5. The Pole-Cat: Sans. *kaçika*, Lith. *szészkas* (Fick, *B. B.*, iii. 165).

Peculiar to the European Group.

1. The Hedgehog: G. ἐχῖνος, O.H.G. *igil*, Lith. *ežỹs*, O.S. *ježí* (Arm. *ozni*).
2. The Fox: G. ἀλώπηξ, Lith. *lãpė*, (Lat. *vulpēs*?), G. Lac. φοῦα = Goth. *fauhō* (cf. *B. B.*, xv. 135).

In Greek the fox first appears as the hero of fable in the Parian Archilochus (fr. 89). This conception of the animal is probably Semitic in its origin. *Cf.* author, *K. Z. N. F.*, x. 464; and on other names for the fox in Europe, *cf.* author, *B. B.*, xv. 135.

3. The Lynx: G. λύγξ, O.H.G. *luhs*, Lith. *lúsis*.
4. The Weasel: G. αἰέλουρος = O.H.G. *wisil*, *wisul*; G. γαλῆ = Cymr. *bele* (cf. *K. Z.*, xxx. 358, 367).

Peculiar to the Indo-Iranian Group.

The Jackal: Sans. *sṛgâlá* = Mod. Pers. *shagâl* (?).

B. Rodents.

1. The Mouse: Sans. *mūsh*, Mod. Pers. *mūš*, Arm. *muku*, G. μῦς, Lat. *mus*, O.H.G. *mūs*, O.S. *myšĭ*.
2. The Hare: Sans. *çaçá*, Pamir D. *sūi*, Afgh. *soi*, G. Pr. *sasuus*, O.H.G. *hāso*, Wal. *ceinach* (Stokes, *B. B.*, ix. 88).
3. The Beaver: Zend *bawri*, Lat. *fiber*, Corn. *befer*, O.H.G. *bibar*, Lith. *bĕbrùs*, O.S. *bebrŭ*.

C. Solidungulous.

The Horse: Sans. *áçva*, Zend *aspa*, G. ἵππος, Lat. *equus*, I. *ech*, A.S. *ehu*, Lith. *aszwà*.

Cf. also Arm. *ji*, gen. *jioy* = Sans. *háya*.

Peculiar to the Indo-Iranian Group.

The Ass: Sans. *khára*, Zend *khara*.

D. Cloven-Hoofed or Ruminants.

1. The Ox: Sans. *gŏ*, Zend *gâo*, Arm. *kow*, G. βοῦς, Lat. *bos*, I. *bó*, O.H.G. *chuo*, O.S. *govędo*.
2. The Sheep: Sans. *ávi*, G. ὄις, Lat. *ovis*, I. *ói*, O.H.G. *auwi*, Lith. *awìs*, O.S. *ovĭca*.
3. The Goat: Sans. *ajá*, Arm. *aic*, G. αἴξ (I. *og allaid*), Lith. *ožỹs*, Alb. *δι*.

Also Zend *búza*, Arm. *buc*, O.H.G. *boc*, I. *bocc*, and Lat. *caper*, O.N. *hafr*, refer probably to the he-goat.

Peculiar to the European Group.

The Hart: G. ἔλαφος, ἐλλός, Lith. *élnis*, O.S. *jelenĭ*, Cymr. *ęlain* = Arm. *ελη*, Lat. *cervus* = O.H.G. *hirus*.

Cf. also O.H.G. *elaho* (Lat.-Teut. *alces*), Russ. *losĭ*.

Peculiar to the Indo-Iranian Group.

The Camel: Sans. *úshṭra*, Zend *ushtra*, Mod. Pers. *ushtur*, Pamir D. *ūshtur*, *shtur khtur*.

E. Ungulata.

The Pig: Sans. *súkará*, Zend *hū*, G. ὗς, Lat. *sus*, O.H.G. *sū*, O.S. *svinija*.

Further, European: Lat. *aper*, O.H.G. *ebur*, O.S. *veprĭ*. Indo-Iranian: Sans. *varáhá*, Zend *varáza*.

In this list, as far as I am aware, there is little that could be employed in discussing the question as to the original home of the

Indo-Europeans. It deserves to be noticed first that in the primitive Aryan fauna all the quadrupeds—lion, elephant, ape, &c.—which the Sanskrit people came across for the first time in India are absent; next, that in the vocabulary of the common Indo-Germanic tongue there is a name for the horse, but none for the camel or the ass. We shall not, however, return to this point until we come to the history of the domesticated animals.

First of all we must state our attitude as regards the lion question—on which we have already frequently touched (*cf.* pp. 87, 91).

If we betake ourselves first to Asia, we find apparently that the Indo-Iranians, while yet united, had not made the acquaintance of the king of the beasts. His name is as yet unknown in the songs of the Avesta. The Indians, however, after separating from their Iranian brothers must have encountered the terrible beast of prey when they migrated into the land of the five rivers, for in the oldest hymns of the Rigveda the lion is reputed the most dreadful foe of men and herds alike. His name in Indian is *siṁhá*, *siṁhī*, a word which either comes from the primitive non-Aryan tongues of India, or else is taken from the native vocabulary, in which case it must originally have designated a leopard-like beast, or some such creature (*cf.* Arm. *inc* = *siṁhá*, "leopard").

In Europe the lion's names seem at first collectively to be due to borrowing from the G. λέων, as I assumed before; the Greek word itself has been derived by some from the animal's Semitic names, Hebr. *lĕjbī*, *lābiy*, Egypt. *labu*, Copt. *laboi*. On closer examination, however, this view is found to be met by great phonetic difficulties; neither can the joint Slavonic *lĭvŭ* be referred to O.H.G. *lewo*, nor can the latter, along with the remarkable O.H.G. *louwo*, be explained from Lat. *leo*, the relation of which again to λέων (cf. *leōn-em* : λέοντ-α, λέαινα from *λεανjα) has by no means been cleared up. It looks, therefore, as though in the European names for the lion we have to recognise, besides a good deal of borrowing, the existence of a certain kernel of words primevally related, though certainly as yet this has not been phonetically established.* The idea, however, that the European branch of the Indo-Germanic family might possess a joint name for the lion is not without its basis in facts. The lion, who on palæontological evidence (*cf.* Lubbock, *Prehistoric Times*[4], p. 294) was once distributed over nearly all Europe, had indeed in the Neolithic Age on the whole disappeared, *e.g.*, from the fauna of the Swiss lake-dwellings. Still, according to the express evidence, which cannot

* There are, as far as I can see, two possibilities, both of which, however, leave some points obscure.

First, one can start from a root-form *liv* : *leiv*. *Liv-* explains: O.S. *lĭvŭ*, O.H.G. *lēwo*, probably also Lith. *liūtas* (*cf.* above, p. 126) and G. λῖς. *Leiv-* explains: Ion. λείων, Lat. *leo* (Lat. *leo* from *leiv-on* like *deus* from *deiv-as* = Sans. *dēv-ás*). O.H.G. *louwo* (for which there is only late authority) remains unexplained.

Or one can assume *lev-jon* : *lov-jon* (root *lu*, *lev*, *lov*). The former explains G. λείων, λέων, from which in this case Lat. *leo* would be borrowed; the latter explains O.H.G. *lēwo* and *louwo*. The Slavonic *lĭvŭ*, Lith. *liūtas*, and G. λῖς remain unexplained. With M.H.G. *lunze*, *cf.* Slav. *lvica*.

reasonably be doubted, of Herodotus (vii. 125) and Aristotle (*Hist. Animal*, 28), a species of lion survived in Thrace and neighbouring districts even till historic times; so that there is nothing to prevent us assuming that it was in Europe itself that the Indo-Europeans had learnt to know and name the lion.

Still who would hope to get further in these things than weighing probabilities?

Nothing like so far back in the history of the Indo-Europeans does the lion's dreadful rival for supremacy over the beasts, the tiger, go. In India the songs of the Rigveda have nothing to say about him; his name (*vyâghrá*) first occurs in the Atharvaveda, *i.e.*, at a time when the Indian immigration must have extended much farther towards the Ganges; for it is in the reeds and grasses of Bengal that we have to look for the tiger's proper home. Nor is he mentioned amongst the beasts of prey in the Avesta. The district of Hyrcania, whose numerous tigers the later writers of antiquity speak of with especial frequency, was then called *Vehrkâna* "wolf-land."

It is, therefore, not improbable, as H. Hübschmann conjectures (*Armen. Stud.*, i. 14), that the tiger has spread in relatively late times from India over portions of West and North Asia. The Armen. *vagr*, "tiger," is remarkable; Hübschmann takes it as borrowed from Sans. *vyâghrá* through the Persian (Mod. Pers. *babr*, though *papara* is older; *K. Z.*, xxvi. 542). W. Geiger, but I cannot agree with him, reckons the tiger amongst the Indo-Iranian fauna (cf. *La civilisation des Aryas*, ii. 35, *extrait du Muséon*).

In Europe the first tiger was seen in Athens about 300 B.C. The king Seleucus (Nicator) sent him as a present to the Athenians, as the verses of Philemon in the *Neæra* state:—

ὥσπερ Σέλευκος δεῦρ' ἔπεμψε τὴν τίγριν ἣν εἴδομεν ἡμεῖς.

(*Athen.*, xiii. 590.)

As to his Græco-Roman name, Varro—the first Latin author to mention the tiger—remarks: "Tigris qui est ut leo varius; vocabulum ex lingua Armenia; nam ibi et sagitta et quod vehementissimum flumen dicitur tigris;" cf. *L. L.*, v. 20, p. 102, only it is not in Armenian, but in Iranian that *tighri*, Mod. Pers. *tîr*, means "arrow."

But even if we leave aside the lion and tiger, the list of Indo-European mammals contains quadrupeds enough for the primeval sportsman; but it is worthy of note in this connection that the Indo-Germanic languages contain no uniform, primeval term for "the hunt, to hunt, hunter." This idea either is expressed by derivatives from words for "wild animals" (Sans. *mṛgá-ya-té* : *mṛgá*, "game," *mṛgayā*, "hunt," *mṛ́gayu*, "hunter," G. θηρεύω : θήρ = Lat. *férus*), or else verbs of a more general meaning have assumed the special sense of hunting, as G. ἀγρεύω, ἀγρεύς from ἄγρα (= I. *ár*, "fight, battle"), or O.H.G. *jagôn* (perhaps = G. δι-(j)ώκω); or, lastly, paraphrases have been resorted to such as G. κυνηγέτης. Still it deserves to be noted that in Europe in three linguistic

areas, which frequently coincide elsewhere in their vocabularies (above, p. 127), an Indo-Germanic root of general meaning has uniformly retained a reference to hunting and to wild beasts. It is the Sans. *vī*, *vē-ti*, "to rush upon, fight," which recurs in Lat. *vē-nari*, O.H.G. *weida*, O.N. *veiðr*, As. *wāð* (* *voi-to*), and in I. *fiad*, "game," *fiadach*, "hunt" (**vei-dho*).

Generally, however, one ought perhaps to be on one's guard against assigning too important a part to hunting in the life of primitive hinds beginning farming. The spoils of the chase were not offered to the gods and were only eaten in time of extremity. So, perhaps, Tacitus formed the more correct estimate of our fore-fathers, when in patently designed antithesis to the words of the *divus* Julius (*de B. G.*, vi. 21, *vita omnis in venationibus*; and iv. 1, *multum sunt in venationibus*) he said expressly in the *Germania*, (c. 15): *Non multum venationibus, plus per otium transigunt dediti somno ciboque.* "Primitive man fights wild beasts because he must. Sport is known only in higher stages of culture, and only then demands a special name.

In the bird-world,* to which we now pass, the difficulty of ascertaining what was known to the primeval period is increased by the frequency of onomatopoetic formation, on which we have insisted above. Thus we find as characteristic:—

Of the Owl: the sounds *ū* and *bū*: Sans. *ūlūka*, Lat. *ulula*, O.H.G. *ūwila* – Arm. *bu-čē*, G. βύας, Lat. *būbo*.

Of the Cuckoo: *ku*: Sans. *kōkilā*, G. κόκκυξ, Lat. *cucūlus*, O.S. *kukavica*, Lith. *kukuti*, I. *cói*.

Of the Hen: *kerk*: Sans. *krka-vāku*, Zend *kahrkāsa*, *kahrkatās*, Mod. Pers. *kurk*, Kurd. *kurk*, Afgh. *čirk*, Osset. *kharkh*, Pamir D. *kŏrk*, G. κέρκος (*cf.* also κέρκαξ· ἱέραξ, κέρκος· κρέξ, κερκίβαλις· ἐρωδιός, κερκνός· ἱέραξ (Hesych.), I. *cerc*.

Of the Raven and the Crow: *kor*: G. κόραξ, Lat. *cornix* – G. κορώνη, Lat. *cornix*, Umbr. *curnaco*.

Of the Hoopoe: *ūḍ*: G. ἔποψ, Lat. *upupa*.

Of the Jay: *ki-ki*: Sans. *kikidīvi*, G. κίσσα (from *κικια), O.H.G. *hehara*.

Of a Partridge-like creature: *te-tor*, *ti-tir*: Sans. *tittiri*, Mod. Pers. *tedzrev*, G. τέτραξ, τέτριξ, τετράων, Lat. *tetrao*, O.S. *tetrěvŭ* (with frequent changes of meaning).

It not unfrequently also happens that the same root furnishes names for very different birds: thus *qan* (Lat. *canō*) furnishes Lat. *ci-cōn-ia*, "stork," G. κύκνος, "swan" (**qe-qno-*, unless the Greek word is to be connected with Sans. *śakunā*, above, p. 130), and Teut. *hana*, *huon*, "cock, hen," ἠκανός· ἀλέκτρυόν, Hes. (root *qn*, *qan*, *qōn*). Again, Sans. *kap-ōta*, "dove," Pāmir D. *kilit*, and O.H.G. *habuh*, "hawk" (Mid. Lat. *capus*), appear to derive from the same root (Lat. *capiō*), "to seize, grip."

* *Cf.*, for much that belongs here, O. Keller, *Griechische und Lat. Tiernamen*, *Ausland*, 1879, p. 441 *ff.*; 470 *ff.*; and A. v. Edlinger, *Erklärung der Tiernamen*.

Except in names of these kinds, the names of but few birds agree in both Asiatic and European languages. I may mention :—

Sans. *çyêná*, Zend *saêna*, "eagle or falcon," G. ἰκτῖνος, "kite" (Armen. *çin*, "milvus" ?).

Sans. *vártikâ*, Pamir D. *wolch*, G. ὄρτυξ, "quail."

Sans. *haṁsá*, Armen. *sag*, Afgh. *zâghah*, G. χήν, Lat. *anser* (I. *gēis*, "swan"), Teut. *gans*, O.S. *gąsĭ* (perhaps borrowed from the Teut.), Lith. *žąsis*, "a goose-like bird."

Sans. *âtí*, G. νῆσσα, Lat. *anas*, O.H.G. *anut*, "a duck-like bird."

Agreement is more frequent in Europe :—

O.H.G. *aro*, O.S. *orĭlŭ*, Lith. *erélis*, Corn. *er*, "eagle" : G. ὄρνις, "bird" (*cf.* G. αἰετός, "eagle," from *α-Fιj-ετος according to Benfey : Sans. *vi*, "bird," G. οἰωνός).

G. γέρανος, Lat. *grus*, Cymr. *garan*, A.S. *cran*, Lith. *gérve* O.S. *žeravĭ* (Armen. *krunk*), "crane."

G. κίλλ-ουρος (*κι-λ-ια) = Lith. *kiĕlė*, "wag-tail" (author, *B. B.*, xv. 127).

G. λάρος, O.N. *líri*, "a sea-bird" (? Bugge, *B. B.*, iii. 105).

Lat. *turdēla*, M.H.G. *drostel*, Lith. *strázdas*, "throstle."

Lat. *picus*, O.H.G. *specht*, "woodpecker."

Lat. *sturnus*, O.H.G. *stara*, "starling."

With considérable change of meaning :—

G. ψάρ, "starling," Lat. *parra*, Umbr. *parfa*, "avis auguralis" (or *pârus*, "titmouse"), O.H.G. *sparo*, "sparrow."

Lat. *merula* (*mis-ula), "ousel" : O.H.G. *meisa*, "titmouse."

So much for the names of Indo-Germanic birds. Here, again, we reserve for our next chapter the answer to the question whether any of them had passed into the service of man in prehistoric times in order that in this chapter we may estimate the significance which the bird-world possessed in the faiths or superstitions of the Indo-Europeans.

To man in the earlier stages of culture the beast of the wilderness is an object of reverential respect. With the fox, the wolf, the weasel, &c., that crosses the path or the vision of the traveller, he associates forebodings sometimes of joy, but mostly of gloom, to such a degree that at the present day we can hardly form an idea of the religious and superstitious anxiety with which the various phenomena of nature weighed on the mind of man (*cf.* P. Schwarz, *Menschen und Tiere im Aberglauben der Griechen und Römer*, Progr. Celle, 1888 ; and L. Hopf, *Tierorakel und Orakeltiere in älter und neuer Zeit.*, Stuttgart, 1888).

To an especial degree does this hold good of the kingdom of birds, whose mysterious and incalculable comings and goings in the region deemed to be the abode of the immortals seem to fit them above all other creatures to afford mankind indications of the will of the gods or the mystery of the future. Possibly, too, the observation that it is birds which give the first intimation of the coming spring or winter may have contributed towards the belief in

their gift of prophecy, though certainly it is not ascribed principally to migratory birds but mostly to birds of prey.

Some birds are of themselves signs of good-luck or ill-luck. Amongst the latter are not only the owl, but—what seems less generally known—the dove. The dove is an Indo-Germanic death bird, whether on account of its dark grey plûmage (*πέλεια* : *πελός*, Goth. *dûbô* : I. *dub*, "black"), or of its complaining note, which even the ancients had observed.

Ulfilas translates "turtle-dove (*τρυγών*) by *kraivadûbo*, "death bird." The Longobardi, as J. Grimm (*D. Myth.*) states on the authority of Paulus Diac., erected near the graves in churchyards poles, on the top of which was a wooden image of a dove for those of their relations who died or were killed abroad.

We encounter a similar view in the Veda. Here *kapôta*, "dove," is the messenger of *Nirṛti*, the spirit of death, and of Yama, the god of death. A characteristic passage may be found in the Rigveda, x. 165 :—

1. *Dêvâh kapôta ishitô yad ichhân idduhô nirṛtyâ ârâgâma.*
Tasmâi archâma kṛṇavâma nishkṛtim çam nô astu dvipâdê çam catushpadê.

"Ye gods, what the sacred dove the messenger of *Nirṛti* came in quest of, for that will we make expiation and song; may it be well with our two-footed creatures, well with our four-footed beasts."

2. *Çivah kapôta ishitô no astu mâdgû dêvâh çakunô gṛhê'sha.*

"May the holy dove be gracious unto us, ye gods, and the birds in the house without harm."

3. *Mâ nô hinsîd idâ dêvâh kapôtah.*

"May the dove do us no injury here, oh! gods."

4. *Yasya dûtâh prêshitâ eshâ idât idamâi yamâyâ nâmô astu mṛtyavê.*

"Honour be to Yama, to death, as whose messenger she (the dove) has been sent hither," &c.

Cf. also A. Weber, *Omina und Portenta. Abh. d. k. Ges. d. W. in Berlin*, 1858; and E. Hultzsch, *Prolegomena zu Vasantarâja çâkuna nebst Textproben*, Leipzig, 1879. If, however, the conception of the dove as a death-bird may be regarded as Indo-Germanic, a hitherto obscure term for this creature in Greek may perhaps be explained: it is *φάσσα*, *φάττα*, which then (*σὺ πρόφρασσα* and *Περσέφασσα*) would belong to root *φεν* (**φη-τ-ja*) in *ἐ-πέ-φν-ον*, *φόν-ος*, and would explicitly designate the dove as the "death-bringing" bird.

As a rule, however, the appearance or cry of one and the same bird is lucky or unlucky according as it comes from the right or the left. Here, however, we have the well known remarkable fact that by the Romans omens on the left were regarded as betokening good-luck, omens on the right bad-luck, whereas amongst other Indo-Europeans it is the opposite idea which prevails. It will not

therefore, be wholly uninteresting to ascertain what was the original Indo-European view.

J. Grimm (*Geschichte d. D. Spr.*, "Recht und Link," pp. 980–96) gives his explanation as follows: first he starts from the indubitable fact that the Indo-Europeans originally took their bearings by turning their faces to the sun so that they had the south to the right and the north to the left. This is proved by the agreement of the Indo-Iranian languages with the Celtic. *Cf.* Sans. *prañc* and *pûrva* = Zend *pouru*, "in front" = east; Sans. *dákshiṇa* = Zend *dashina*, "to the right" = south; Sans. *savyá*, "left" = north; and I. *dess*, "to the right" and "southwards;" *túath*, "to the left and northwards." A trace of this way of looking at things has been preserved by Teutonic in its O.H.G. *nord*, &c., which corresponds to the Umbrian adjective *nertru*, "sinistro," *nertruku*, "ad sinistrum" (*G.* νέρτερος, "nether").*

The north therefore was to the left. Consequently, J. Grimm goes on to argue, as antiquity placed the habitation of the gods to the north, it was natural that signs from the left should be considered lucky. This view the Romans have preserved. "The Greeks, however, and all other peoples agreeing with them in this matter, must in their wanderings westwards have accustomed themselves to direct their looks to the setting instead of the rising sun, and so the auspicious north came to be on their right side, whereas previously it had been on their left."

This view contains several improbabilities. I will insist only on one. The Indians, who on no theory migrated from east to west, and who did retain the primitive way of taking their bearings (cf. *The Dekkan* = *dákshiṇa*), ought, if J. Grimm's view were right, at all events to have remained faithful to the old view that omens on the left betokened good luck. But in the Rigveda it is the right side which is considered lucky. *Cf.* Rigveda, ii. 42:—

3. *Áva kranda dakshiṇatô gṛhâṇâm sumaṅgalô bhadravâdî çakunté.*

"Cry, oh! bird, from the right of the house, and bring luck and betoken happiness;" and Rigveda, ii. 43:—

1. *Pradakshiṇíd abhí gṛṇanti kârávô váyô vádanta ṛtuthâ çakúntayaḥ.*

"On the right sing the singers of praise, the birds, who speak in accordance with order."

In contrast to this, compare the meanings of *vâma*, "left, askew,

* For other names for points of the compass, cf. *Handelsgeschichte u. Warenkunde*, i. 42. We may add O.S. *jugŭ*, "south," "south wind," Čech *jih*, "wet weather," which I compare with G. ὑγρός, "damp," "wet." *Cf.* also νότος, "south," "south wind," νότιος, νοτερός, "damp" (N.H.G. *nass*?). The Teutonic name for the south is still involved in complete obscurity. O.H.G. *sundan*, O.N. *sunnan*, A.S. *sûdan*, "from the south," orig. Teut. stem *sunþ*. I may, therefore, remark that possibly the name for the southern quarter coincides with that of the sea, the strait: O.N. *sund*, A.S. *sund*, orig. Teut. stem *sunþ* (from **svum-to* : *schwimmen*). *Cf.* Hebr. *yâm*, "sea" (Mediterranean) = "west." From this it would follow that at a certain period of their prehistoric development the Teutons settled to the north of some sea.

awry, unfavourable," &c., masculine "the left hand," neuter "disgrace, disaster."

I am consequently inclined rather to infer from the agreement of Sanskrit, Greek, and Teutonic (*cf.* J. Grimm, *loc. cit.*, p. 984; and Cicero, *Div.*, ii. 94: "Ita nobis sinistra videntur, Graiis et barbaris dextra meliora"), that it is these languages and peoples that have preserved the original idea. Only, "right – left" = "lucky – unlucky" had in this connection originally nothing to do with the points of the compass, but was based solely on a symbolical transference of conceptions previously formed of the right hand and the left.

The Indo-Germanic word for "the right" (Sans. *dákshiṇa*, Zend *dashina*, O.S. *desinŭ*, Lith. *deszinė*, G. δεξιός, Lat. *dexter*, L. *dess*, Goth. *taihsvô*) means nearly everywhere also "skilful, clever." *Cf.* also O.S., A.S. *suithôra*, *svidre*, "right hand," *i.e.*, "fortior, citior." M.H.G. *diu bezzer hant* (J. Grimm, *loc. cit.*, p. 987). In the opposite way, G. λαιός, Lat. *lævus*, O.S. *lěvŭ* belong to G. λιαρός, "tepidus, lenis," O.H.G. *slêo*, O.S. *slêu*, "feeble, lukewarm" (stem **slaivo* : **slivo*), Sans. *a-srê-mán*, "not growing weary;" and I would explain G. *link* in much the same way. I compare O.H.G. *lencha*, "left hand," Low Rh. *slinc* (stem **slengo*) : G. λαγαρός, "languishing" (stem **slng-*), and Lat. *langueo*, "be faint" (stem **slng-*). Further, G. λήγω, "cease": O.H.G. *slach*, O.N. *slakr* (root **slēg* : *slag*). For σκαιός = Lat. *scævus*, "left," unfortunately no etymology is forthcoming. Goth. *hleiduma* : G. κλιτύς, "slope," is really "awry" in contrast to *rechts* originally "straight."

It was, therefore, from the right side that lucky signs came, because the right is equivalent to "skilful," "clever;" and from the left that unlucky signs came, because the left was regarded as "weak," "feeble." Now it is a phenomenon exhibited in all languages that the utterance of ominous, ill-foreboding words is avoided. It is conceivable that the faithful preservation of the word for the right in the Indo-Germanic languages, as contrasted with the divergence even of dialects in the designations for the left—the Teutonic and Italian tongues (Umbr. *nertro* : Lat. *sinister*) may be mentioned—finds its explanation in this fact. In place of such ominous words, which there is a tendency to avoid, euphemistic terms (*cf.* Germ. *Freund Heim* for death) or expressions of pious reverence (*cf.* Germ. *Gottseibeiuns* for devil) are employed.

It is only from this point of view that it seems to me possible to fully understand certain words for the left in the Indo-Germanic languages, *e.g.*, the G. εὐώνυμος, which means "of good omen" in the same sense that the dread Erinyes were called Eumenides, "the gracious," *i.e.*, those whom we would fain have gracious to us. The G. ἀριστερός, which even in Homer (*Od.*, xx. 242) means both "the left" and "unlucky," I derive not from ἀρείων, ἄριστος, ἀραρίσκω, ἀρέσκω, but from ἀρά, "prayer," "entreaty," "curse," "malediction," ἀραῖος, ἀράομαι, ἀρειή, so that it designates the side expressed only with reverence and awe. So, too, in my opinion, as regards Zend *vairyastára* and O.H.G. *winistar*, "left," which, according to K. Brugmann, originally had

the sense of good and desirable (*Rhein. Mus. N. F.*, xxviii. 399, *ff.*), we ought rather to start from the roots *ver* and *ven*, in the meaning of the Lat. *verēri* and *venerāri*, so that the sense of these words also would be *verendus* and *venerabundus*.

In Latin one would most naturally expect a word for "left," with the express sense of "beneficial;" and Brugmann (*loc. cit.*), separating Lat. *sin-i-ster* from *sen-ex*, with which Windisch (*K. Z.*, xxvii. 169) had connected it, has an attractive derivation of it from root *sen* (Sans. *sán-îyas*, "more profitable," G. *ἀνύω*).

Originally, therefore, right and left had nothing to do with east and west, south and north, as far as the interpretation of omens is concerned.

It was only when the interpretation of bird-portents and other *οἰωνοί** had become a special science in Greece and Rome that it became necessary to transfer "the right" and "the left" to the quarters of the sky. The G. *θεοπρόπος*, "inquirer of the gods" (root *prek* = Goth. *fraihnan*), or *μάντις*, differing from the usual mode of orientation, turned his face to the north: thus the east was to the right, and betokened good luck, the west to the left and boded ill. This is clearly shown, *e.g.*, in Homer (*Il.*, xii. 237, *ff.*):—

> τύνη δ' οἰωνοῖσι τανυπτερύγεσσι κελεύεις
> πείθεσθαι, τῶν οὔτι μεταπρέπων οὐδ' ἀλεγίζω
> εἴτ' ἐπὶ δεξί' ἴωσι πρὸς ἠῶ τ' ἠέλιόν τε
> εἴτ' ἐπ' ἀριστερὰ τοί γε ποτὶ ζόφον ἠερόεντα.

Σκαιός = Lat. *scævus*, "left," is used several times (cf. *Od.*, iii. 295) in the sense of western.

In the case of Roman auspices we have to assume two different modes of orientation: first, the more common, ancient Indo-Germanic mode of turning to the east; and, second, a less common, apparently younger, mode of turning to the south (*cf.* Nissen, *Das Templum*, 1869, p. 171, *ff.*). The left side, which, according to the augur's conception, is the lucky one, is accordingly either the north (*cf.* Servius, *ad Aen.*, ii. 693: "Sinistras autem partes septentrionales esse augurum disciplina consentit, et ideo ex ipsa parte significantiora esse fulmina, quoniam altiora et viciniora domicilio Jovis") or the east, the quarter of the rising sun. By the side of this view, however, there perpetually runs the usual, perhaps the people's, idea of the sinister character of omens on the left, and the propitious character of those on the right, as a glance at the lexicon, *s.v.*, 'lævus,' 'scævus,' 'dexter' will show. *Cf.* also Plaut., *Asin.*, ii. i. 12: "Picus et cornix ab læva, corvus, parra ab dextera consuadent."

How the Roman augur reached this optimistic view of omens on the left, whether by borrowing from Etruscan ritual (*cf.* Dionys., v. 5: *τίθενται δὲ Ῥωμαῖοι τὰς ἐκ τῶν ἀριστερῶν ἐπὶ τὰ δεξιὰ ἀστραπὰς αἰσίους, εἴτε παρὰ Τυρρηνῶν διδαχθέντες* . . . .), or from cosmo-

* Like the G. *οἰωνός*, the Sans. *çakuná*, originally "bird," has acquired the meaning of "omen." *Çákuná* is the science of the *çakunika*, *i.e.*, of him who know how to interpret the *çakuná*. *Cf.* on this E. Hultzsch, *loc. cit.*, p. 6, *ff.*

gonical or other considerations, we do not know. In no case, however, are we justified in treating a peculiarity of Roman augury, which conflicts with the usage of related peoples as an ancient Indo-Germanic custom.

Finally, we may remark incidentally upon one direction in which the bird-world has been of importance for the history of culture, even though now in the time before the dispersion of the Indo-European peoples not amongst all Indo-European peoples—the custom of hunting another game with falcons, hawks, sparrow-hawks, &c. Where, to whom did this mode of hunting first arise?

F. X. Pfeil (*Kulturpflanzen und Haustiere*, p. 367) asserts that falconry is a German practice, but rather came to the Germans from the Celts, and that at no very early period. This view, however, seems to me to have no evidence; for hunting with birds was not, at any rate in early times, anywhere amongst the Celts; and as regards the series l. *sebocc*, Cymr. *hebawc*, O.H.G. *habuh*, O.N. *haukr*, "hawk," it was not the Teutons, as Hehn believed, but on the contrary the Celts (*cf.* Thurneysen, *Kelto-Romanisches*, p. 22), who were the borrowers.

In the fourth century A.D. the new mode of hunting must have made its appearance amongst the Romans (*cf.* Baist, *Z. f. D. A. u. L.*, 1883, p. 54, and W. Brandes, *Arch. f. Lat. Lex.*, 1886, p. 141, *accipiter*, "falcon for hunting"), and it is not improbable that it migrated from Teutonic into Roman territory. This is favoured by a set of Latin terms for hawking which are plainly of Teutonic origin: thus, It. *sparaviere*, F. *épervier*: O.H.G. *sparwâri*, "sparrow-hawk," It. *gerfalco*, Span. *gerifalte*, Prov. *girfalc*, Fr *gerfaut*: O.N. *geirfalki*, "spear falcon" (Baist, *loc. cit.*, p. 59), or from *geir-falke*, It. *logoro*, F. *leurre*: M.H.G. *luoder*, "lure." Again, O.H.G. *falcho*, O.N. *falke*, M. Lat. *falco*, It. *falcone*, F. *faucon*, although I cannot accept Baist's proposed derivation from *fallen* any more than Kluge's from *Volcæ*, seems much more likely to be of barbarian than of Roman origin (*cf.* Baist, *loc cit.*, p. 58).

If this is correct, then as Cæsar, Pliny, and Tacitus are not acquainted with falconry amongst the Teutons, it may have appeared amongst them for the first time in the second or third century. This, however, is the time, *i.e.*, about the second half of the second century, of the migration of the Goths to the Lower Danube and the Black Sea. Now, south of the Danube, in ancient Thrace, as we know from Aristotle's *Hist. Anim.*, IX. XXXVI. 4, hawking was practised before the Christian era. If this mode of hunting had taken root in Thracian soil, the Teutons may have learnt and developed it there, as is the opinion of J. Grimm (*Geschichte d. D. Spr.*, p. 47), who in this question has come to a sounder decision than has V. Hehn. It may be remarked further, that Ctesias (*Op. Reliquiæ Coll.*, Bähr 250) is acquainted with hunting by means of birds in India; but though this practice is familiar to the East, especially among Turko-Tatarik peoples (*cf.* Vambéry, *Primitive Cultur*, p. 100), Ctesias' statement has not, as far as I know, been confirmed from Indian sources.

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Only a few remarks need here be made about the other classes of animals, an examination of whose Indo-Germanic names I reserve. Particular points will meet us subsequently. Emphasis has already (*cf.* above, p. 118) been laid on the total absence of etymologically related names of fishes, certainly a fact of considerable significance, both geographically and in the history of culture. It might appear as though an exception to this were afforded by the name for the eel in some European languages—G. ἔγχελυς, Lat. *anguilla*, Lith. *ungurỹs*, O.S. *agoristĭ*; and since this fish does not occur in streams which empty themselves directly or indirectly into the Black Sea, Penka (*Herkunft der Arier*, pp. 38, 46) accordingly has deemed Southern Russia excluded from the question as to the original home of the Indo-Europeans. This conclusion is wrecked on the fact that the names mentioned may be, and probably (above, p. 118) are, diminutives, separately formed by the respective languages, of an original word for snake: Sans. *áhi-*, Zend *ažhi-*, Lith. *angis*, Lat. *anguis*, O.I. *ezzung*, O.H.G. *uwe*, G. ἔχις. Anyhow, no corresponding Indo-Iranian word is forthcoming. Penka (*loc. cit.*) calls the names for the oyster, G. ὄστρεον, Lat. *ostrea*, A.S. *ôstre*, M.H.G. *ûster*, "primitive Aryan," yet their connection is undoubtedly that of borrowing.

This is rightly emphasised by Max Müller (*Biographies of Words*, pp. 118, 124). Nor does the word for snake just mentioned (*cf.* also Lat. *serpens* = Sans. *sarpá*) prove anything, for snake-like creatures are distributed over the whole Indo-Germanic area.

There seem, however, to have been crab-like creatures in the Indo-Germanic fauna, as is indicated by the equations Sans. *karkata* = G. καρκίνος, Lat. *cancer* (from **carc-ro* ?), and G. κάμαρος = O.N. *humarr*.

CHAPTER III.

CATTLE.

Ancient Indo-Germanic Domesticated Animals: Cow, Sheep, Goat, Dog, Pig, and Horse—Riding and Fighting Chariots—Ancient History of the Mule, Ass, and Camel—Conclusions as to the Original Indo-European Home—The Cat—Birds—Ape, Parrot, Peacock.

WHEN we visit a farm at the present day and observe the friendly nature of the life which goes on there—the horse proudly and obediently bending his neck to the yoke; the cow offering her streaming udder to the milk-maid; the woolly flock going forth to the field, accompanied by their trusty protector, the dog, who comes fawning to his master—this familiar intercourse between man and beast seems so natural that it is scarcely conceivable that things only once have been different.

And yet in this picture we only see the final result of thousands and thousands of years of the work of civilisation, the enormous importance of which simply escapes our notice because it is by every-day wonders that our amazement is least excited.

In the civilised states of the Old World, indeed, the domestication of animals is lost in the mists of antiquity. The inhabitants of the valley of the Nile and of the plain between the Tigris and the Euphrates were the pioneers of civilisation in this respect. Nay! if we go beyond the limits of history and travel back to the time when the Semitic tongues and nations were not yet differentiated, we find that the domestication of animals was already far advanced. The ass, the camel, goats, sheep, oxen, the dog, and perhaps even the horse were then in the service of man (*cf.* Hommel, *Die Namen der Säugethiere bei den südsemitischen Völkern*, p. 461, *f.*).

Even the Indo-European was a cattle-breeder. His herds (Goth. *hairda* = Sans. *gárdha*) were his wealth (Tac., *Germ.*, c. 5), the object for which he fought (Sans. *gávishti*, "struggle for cows" = "fight"), and the source of his food and clothing. Yet he, too, must have passed through a lower stage of development, and the question may be asked whether his cattle-raising was his own idea or suggested by his neighbours? But we shall soon see that the Indo-European names for the oldest domesticated animals have such a thoroughly native air that they lend no support to the hypothesis of borrowing. The importance of cattle in the primitive age is shown by the exist-

ence of a common collective name for it. The Germ. *vieh*, O.H.G. *fihu*, Goth. *faihu*, O.P. *peku* (?), are etymologically identical with Lat. *pecus*, Sans. *paçú*, Zend *pasu* ("small cattle" particularly), and go back to a root *paç* (Sans. *pâçáyâmi*), which meant "fasten," "capture." The domesticated animals were then perhaps originally "the fastened" as opposed to those which ran wild (Curtius: *Grundz.*[5], p. 267). Here a series of general names referring specially to cattle may be mentioned, such as G. ἔθρις = Sans. *vádhri*, "gelder," the use of the root *ster* to designate sterile beasts (Sans. *stari*, Armen. *sterj*, O.H.G. *stëro*, "ram," M.H.G. *stärke*, G. στερρός, Lat. *stérilis*), the roots *ers* (Sans. *ṛshabhá*, G. ἄρρην) and *vers* (Sans. *vṛsha*, Lat. *verres*, Lith. *werszis*) for the male, the root *dhê* for the female (Sans. *dhênú*, Zend *daênu*, I. *dínu*, "agna," &c.); and so on.

By far the most important position was occupied by the horned cattle, as is shown by the primitive names for the special ages and sexes. We may mention here Sans. *ukshán*, Goth. *aúhsa*, Cymr. *ych*, Corn. *ohan*; Zend *staora* ("draught-cattle"), Goth. *stjur*, O.N. *þjórr*, O.S. *turŭ*, G. ταῦρος, Lat. *taurus*, Osc. *ταυρομ*, Umbr. *toru*, *turuf*, Gall. *tarvos*, I. *tarb*; Sans. *gô*, Zend *gâo*, Armen. *kow*, G. βοῦς, Lat. *bos*, I. *bó*, O.H.G. *chuo*, O.S. *govędo*; Sans. *vaçá*, Lat. *vacca*; G. πόρτις, O.H.G. *farro* (Sans. *pṛshatî*, "spotted cow").

The cow, which, like the bull, is intimately connected with Indo-European mythology, has during her life-time a double significance. On the one hand, she is the milk-giving creature (Sans. *dhênú*, Zend *gâo daênu*); on the other, she is specially the beast of burden and draught of the primitive age (Sans. *anadvâh*). When killed, her flesh supplies food, while the hide is converted into shields, bow-strings, bags, straps, caps, &c.*

In the way of small cattle the sheep and the goat were undoubtedly known in the primitive age. That these domesticated animals were known in primitive times is shown first by the equivalent names for them which occur in many Indo-European languages (*cf.* Sans. *ávi*, G. ὄϊς, Lat. *ovis*, I. *ói*, O.H.G. *auwi*, Lith. *awis*, O.S. *ovĭca*; *cf.* also G. ἀμνός = Lat. *agnus*, I. *uan*, O.S. *jagnę*, and Armen. *gaṙn* = G. ἀρήν and Sans. *ajá*, Armen. *ayts*, G. αἴξ, Lith. *ożỹs*, perhaps also Zend *izá* in *izaêna* = Sans. *ajínâ*, O.S. *jazĭno*, "hide;" *cf.* above, p. 248), next by the fact that we find them domesticated in the remotest periods of the history of all the Indo-

* On shields of cow-hide *cf.* above, p. 225. It is especially to be noted that in ancient times the leather bottle was used for keeping liquids in, as is still the case amongst nomad peoples (Vámbéry, *Primitive Cultur*, p. 86), and that this custom explains several names for liquid measures and vessels amongst the Indo-Europeans. *Cf.* G. πέλλα, "milk-pail" (*Il.*, xvi. 642)—never "hide"—: Lat. *pellis*, Goth. *-fill* (author, *K. Z.*, xxx. 479), Lat. *culeus*, "the greatest cubic measure of liquids": G. κουλεός, "leather bottle," M. Lat. *bulga*, M.H.G. *bulga*, "water-vessel of leather," O.H.G. *bulga*, "leather sack": Goth. *balgs*, I. *bolc*, O.H.G. *tunna*, "tun," from the Celtic, I. *tunna*: Mid. I. *tonn*, *tenn*, Bret. *tonnen* (**tunnâ* or **tundâ*: Thurneysen, *Kelto-Rom.*, p. 67), "skin of man and of animals," I. *crocan*, "olla" (A.S. *crocca*, O.N. *krukka*): I. *crocenn*, "hide" (Zeuss, *Gr. C.*[2], p. 778), &c.

Europeans, amongst the Hindus of the Vedas, the Persians of the Avesta, the Greeks of Homer, the ancient Romans, &c.

A scruple that closer investigation is required by the other quadrupeds, which at the present day are to be found in the stables and yards of a farm. Let us begin with the domestic pig: the European name, G. *ὗς*, Lat. *sus*, O.H.G. *sû*, O.S. *svinja*, certainly does recur in Indo-Iranian, in Zend *hû* (Osset. *khuy*, N. Pers. *khûk*, Pamir D. *khûg* *), &c., perhaps also in the Sans. *sûkará*, "wild-boar": only swine-breeding is unknown to the Veda† and Avesta, as also to the original Semites and the Sumerian population of Babylon. On the other hand, as a glance at Odysseus' wealth in swine is enough to show, they were common in the Homeric period. At the most, the extreme rarity with which pigs, as compared with cows, sheep, and goats, are used as offerings, might be made into an argument to show that the Greeks made the acquaintance of the animal somewhat late. In Italy, again, there is evidence to show that the pig was domesticated of old (Lat. *sus*, Umbr. *sim*, acc. sing., *sif*, nom. plur.), and in the Suovetaurilia the pig was an essential feature. When one considers these facts, and reflects that it is in the European languages that a new name, common to all the languages, and originally perhaps designating the young of the animal (G. *πόρκος* in Varro, Lat. *porcus*, Umbr. *porka*, I. *orc*, O.H.G. *farah*, Lith. *paršas*, O.S. *prase*), crops out, the conjecture suggests itself that it was first among the European members of the Indo-Germanic family that the domestication of the pig spread, and that contemporaneously with numerous other advances in agriculture (*cf.* below, ch. v.) made by them; for to rear and house the pig demands a settled and agricultural population. In the extreme north, in Finland and Esthonia, the pig was, until quite recent times, dreaded as the destroyer of the young crops; and fowls and pigs were exhibited for money by wandering gipsies as strange and remarkable beasts (*cf.* Ahlqvist, *Kulturwörter*, p. 22).

It would be of extraordinary importance for the history of culture to secure a final solution of the question how far the horse, which was undoubtedly known to the Indo-Europeans (Sans. *áçva*, Zend *aspa*, G. *ἵππος*, Lat. *equus*, I. *ech*, O. Sax. *ehu*, Lith. *aszwà*), was amongst the number of the animals domesticated in the primitive age. The domestication of this noblest of animals, on whose back the bold rider speeds with the rapidity of lightning, gives, as the interesting picture drawn by V. Hehn in his *Kulturpflanzen und Haustieren* shows, an entirely new and special character to a primitive people.

The art of riding was practised neither by the Greeks of Homer

* "The Mordv. *luwa*, *luwo*, 'sow' (from *suwa*), is a primeval loan-word; the oak-forests on the Middle Volga have been from the oldest times a favourable locality for rearing swine" (Tomaschek, p. 32). Ahlqvist (*Kulturw.*, p. 18) regards the Mordv. word as genuine.

† *Cf.* also *Iliad*, ii. 4: *ἐν οὔτε ἔγριον οὔτε ἥμερον ἐν ὕδασι γενέσθαι λέγει* Κηφεύς.

nor by the Hindus of the Rigveda,* and if it is common amongst the Persians of the Avesta, it is not improbable that they learnt it from the nomad tribes of the Turko-Tataric family which swarmed round Persia (*cf.* W. Geiger, *Ostiran. Cultur.* p. 354). The terms for riding again in the related languages differ from one another, and are apparently of recent date (*cf. ἵππος* : *innus*, *equitare* : *rapio*, *equo vehi* like the Zend *hyārĕna* = *ἐφέρετο*. "he rode," Germ. *reiten*, O.N. *ríða*, A.S. *rīdan*, properly "to move forward," G. *φέρεσθαι*, M.H.G. *rîden*, "to travel by ship," &c.). Further, where the horse is used as a beast of draught it is not yoked to the heavy wagon, a piece of work which, as we have said, the ox had to perform, but is harnessed (as is the practice of the most ancient Greeks, Hindus, and Persians) to the rapid war-chariot, or, at the most, to a light travelling carriage.

This custom, again, of using chariots for the serious business of war or the joyous amusement of racing, can scarcely be regarded as dating from the primeval Indo-Germanic period. To say nothing of anything else, it would impute to the primitive age a mode of carriage-building such as we could by no means expect in the ancient time when metals were unknown (*cf.* below, ch. x.).

In Europe the use of war-chariots amongst the most ancient Greeks, which is established by the grave-stones of Mycenæ, undoubtedly derives from Egypt and Semitic Asia Minor, where this mode of fighting can be traced as far back as the seventeenth century before Christ (*cf.* W. Helbig, *Das homerische Epos*, p. 88, *ff.*). The Indo-Iranian custom of fighting from war-chariots may well belong to the same circle of culture. Indeed, Roth, in any rate (*Z. d. D. M. G.*, xxxv. 686), is of opinion that it could not have originated in the narrow valleys of India, though it may have originated amongst their Persian brethren in the plains north of the Paropamisus.

Strange to say, war-chariots were known to another section of the Western Indo-Europeans, the Celtic Britons, with whose *essedarii* Cæsar made his acquaintance. V. Hehn (*Kulturpf. u. Haust.*, p. 52), whose tendency is to refer all identical or similar phenomena of culture to one centre, is of opinion that the Celtic war-chariots "were borrowed after the great Celtic migrations to the East, and into the neighbourhood of Persian and Thracian peoples, from these peoples."

* That is to say, it was not of importance for the history of culture, especially for military purposes; for that the art of occasionally jumping on the back of the swift-footed creature was understood is shown by various passages both in the Homeric poem and in the Rigveda. Of the former, the most important are *Od.*, v. 371; *Il.*, x. 513 and xv. 679. Of the latter, especially, v. 61. 2:—

Kvā vō̆ aśvā hvābhīr āvadhvam? "Where are your horses, where the bridle?"
Kuthāyāthā kuthā yayāth? "How could you, whence did you come?"
Pṛśnēś cārbhā mahō yāmah. "On their back the seat, in the nostrils the rein."
Jaghanē vāṇā ṣāmah. "On their hindquarters the whip (?)."
Ví vakthāṇi nárō jagmuh. "The men bestrode them."
Putrakṛthō nō jánayah. "Like women *in filia procreando*."

Cf. Max Müller, *Biographies of Words*, p. 116.

However, if we reflect that the movement referred to, of Galatian tribes to Thrace, Greece, and Asia Minor, was not earlier than the beginning of the third century, whereas England was occupied by Celtic tribes much earlier (*cf.* K. Müllenhoff, *D. A.*, ii. 238), we shall deem it incredible that the knowledge possessed by the former, even though they might have picked it up from the Thracian tribes, was only preserved by the latter: for, of the existence of the custom of fighting from chariots amongst the Continental Celts Cæsar knows nothing. The Celts were a people fond of horses and experienced in the art of building wagons, as the dependence of the Romans in this respect on the Celts shows (*cf.* Lat. *reda*, "mail-coach"; I. *dêrad*, "hige," Lat. *serracum*; I. *sessrech*, *sessach*, "wagon," Lat. *carrus*: I. *carr*, &c.). As the fighting of infantry and cavalry mixed was a specially Celtic (and Teutonic) feature, why should not a tribe have hit upon the idea independently of yoking the swift-footed horse to a lightly built war-chariot?

The horse then cannot have been employed in the primitive period either for riding or driving. It is, however, conceivable that, then, as is even now the case with the Turko-Tataric tribes, horses were bred in half-wild droves, not so much for the service as for the food of man—for the sake of their flesh and milk; and I confess that this possibility still seems to me to fit in most excellently with the picture which we must form of the primitive national economy of the Indo-Europeans. Not until after the dispersion, though perhaps while certain groups were still connected together (Sans. *aryan* = Zend *airyan*, Armen. *yi* = Sans. *haya*, G. ἵππος = Goth. *fula*, O.H.G. *folo*, O.H.G. *strot* = Lith. *stodas*, O.S. *stado*, "herd of horses"; *cf.* O.I. *graig*, "herds of horses": Lat. *grex*, I. *marc* = O.H.G. *merzha*), was it that horse-breeding attained to a certain importance, though it was only in historic times that the creature became an important factor in commerce, and came to take the place of the steer or mule in field-work and domestic labour (*cf.* on this point, author, *Handelsgeschichte u. Warenkunde*, i. 23, *f.*). For the place of the horse in the history of culture, especially for the sanctity which attached to him, particularly amongst the Iranian and Teuto-Slavonic tribes, and for horse-oracles, see V. Hehn, p. 20, *ff.*

Finally, if we give one more glance at the peoples who were the neighbours of the Indo-Europeans, we find that A. v. Kremer would make out that the domestication of the horse was unknown even to the original Semites—nay! that they even borrowed the name of the animal from the Indo-Europeans. However, we have made our acquaintance with F. Hommel's attempt (*cf.* above, p. 43) to establish an original Semitic name for war-horse. In any case, the Semites were familiar with horse-breeding at an early period, and they first introduced it amongst the Sumerian population of the Euphrates district (*cf.* F. Hommel, *Die vorsemit. Kultur*, p. 402, *f.*).

Again in Egypt, where on the monuments of the ancient kingdom (3500–2000) horses are neither pictured nor mentioned, the names for the horse, *sesem-t*, *ses*, *somsem* (Hebr. *sûs*), betray their Semitic origin (*cf.* F. Hommel, *Die Namen der Säugethiere*, p. 420, *f.*).

Finally, while the horse was known in an undomesticated state to the Indo-Europeans before the dispersion, the uniform name, *ak*, applied to the animal by all the members of the tremendous Turko-Tataric family, serves to show how near we are now approaching to the centre from which the horse was originally propagated, the steppes of Central Asia (*cf.* H. Vambery, *Die Primitive Cultur*, p. 188). The Finns also had made acquaintance with the creature before making their appearance on the Baltic.

If it is probable that the domestication of the quadrupeds thus far mentioned—and amongst these domesticated animals we may indubitably include the watcher of the herds, the dog (Sans. *çvân*, Zend *spâ*, G. *κυων*, Lat. *canis*, I. *cú*, Teut. *hun-d*, Lith. *szů*)—must be regarded as dating from prehistoric times; it is equally probable that the remaining mammals, used at the present day as domestic animals, over either all or parts of the Indo-Germanic area—that is to say the ass, the mule, the camel, and the cat—played no part in the economy of Indo-Germanic life. We will begin by discussing the first three kinds of animal, and that with reference to the state of things in Europe.

The beast of draught and burden *par excellence* in the time of Homer and Hesiod is the mule (*ἡμίονος*, *οὐρεύς*, *ὄρευς*). The Homeric poets point to the district of the Paphlagonian Eneti as the mule's native home, Anacreon to the Mysians as those who first effected the union of the ass and the mare (cf. *Il.*, ii. 852, and *Anacr.*, fr. 34, Bergk). The mule then came from Pontic Asia Minor.

On the other hand, the ass is only mentioned once in the Homeric poems, that is in *Il.*, xi. 558, where Telamonian Ajax is compared to the animal. In this connection we shall do well to remember that in the Orient the wild-ass is held as a model of strength and courage, so that the Caliph Mervan received the name of "Dschesira's (*i.e.*, Mesopotamia's) ass." The ass, therefore, cannot possibly have belonged to the domesticated animals of the Homeric age. Under these circumstances it is certainly remarkable that the mule, which was the first to make its appearance, should be named after the ass, which only came later, *ἡμίονος* : *ὄνος*, "half-ass" : "ass." I can only explain this to myself on the assumption that when the Hellenes themselves took to breeding mules they imported individual he or she asses, which were solely for breeding purposes, and were much too costly to use for field or house work. This accords with the fact that in the oldest lyric, immediately succeeding on Homer, the ass appears rather as a brood animal than a domesticated creature, a point which I have discussed in *K. Z.*, xxx. 374, *ff.* The first certain mention

of the ass in the latter capacity I find is in Tyrtæus (Bergk, fr. 6):—

> ὥσπερ ὄνοι μεγάλοις ἄχθεσι τειρόμενοι
> δεσποσύνοισι φέροντες ἀναγκαίης ὑπὸ λυγρῆς
> ἥμισυ παντὸς ὅσον καρπὸν ἄρουρα φέρει.

The Phocæans, according to Hesychius, had a special word for the ass, which was imported for breeding purposes (τοὺς ὄνους τοὺς ἐπ' ὀχείαν πεμπομένους), μυχλός, from which the Lat. *mūlus* is borrowed. This word is also explained by Hesychius as = μοιχός, "adulterer," and I have elsewhere compared it with μυττός (from *μυκ-jo) γυναικὸς αἰδοῖον, Hes., μύξα, "slime," ἀπομύσσω, "blow (the nose)," &c. We have then here the indisputable transition in meaning from "covering ass" to "mule." It seems to me therefore probable that the two other Greek names for mule, viz., οὐρεύς, ὀρεύς (the derivation of which from ὄρος would be too abstract), and γίννος (Fίννος, ἴννος = Lat. *hinnus*) are to be explained in a similar way, as follows:—οὐρεύς : οὐρέω (ὀρεύς being connected in popular etymology with ὄρος, "mountain") and Fίννος from *Fίσ-νος : root *vis*, "to wet, make liquid." In older stages of language the meanings *urinam facere* and *semen profundere* usually run into each other. Again, O.S. *mĭzgŭ*, *mĭskŭ*, *mĭstę*, "ἡμίονος" cannot be separated from *mĕz-ga*, "sap," Lat. *mingere*, G. ὀμιχέω, μοιχός, "adulterer," Sans. *mih* "*mingere*" and "*semen profundere*." The Slavonic peoples also probably derive their knowledge of the mule from the Pontus at an early period.

Unfortunately, the Greek and Latin name for the ass, ὄνος—*asinus*, is itself not yet explained. What we should be most inclined to expect after what has been said would be a Pontic word from Asia Minor; for, wherever the ancients obtained the offspring of the ass and the horse from, there must the ass have been bred from of old. Now, in Armenian, *ēs* occurs as the name of the ass, a word which may come from the ancient non-Indo-Germanic Armenian tongue, and which, according to F. Hommel, recurs in the Sumero-Accadian *aňšu*, *anši* (*cf.* Turko-Tat. *eśek*, *eśik*, "ass"). Some such form of the word, with metathesis of the nasal, **as-no*, **asino*, may have produced the G. ὄνος (*ὄσ-νο) and—through Illyrico-Thracian—the Lat. *asino*.

At any rate, the starting-point I have indicated seems to me more probable, both as regards the word and the facts of the case, than the loan, which V. Hehn following Th. Benfey upholds, of ὄνος—*asinus* from the Semitic, Hebr. *ātôn*, Orig. Sem. *atânu*, "she-ass."

The animal's names in the north of Europe, O.I. *assan* (A.S. *assa*), Goth. *asilus*, A.S. *eosol* (*l* from *n*), and O.S. *osĭlŭ*, Lith. *ăsilas* (which last two again come from the Teutonic), collectively point to the Lat. *asinus* as the source from which they were borrowed.

The camel, as is well known, never entered the service of the European branch of the Indo-Germanic family. Its Semitic name κάμηλος (= Lat. *camēlus*) appears to have first become known in

Greece at the time of the Persian wars. It is mentioned for the first time in Æsch., *Suppl.*, 285. The most extraordinary thing, however, is the Slavo-Teutonic name for this animal; Goth. *ulbandus*, A.S. *olfend*, O.H.G. *olbenta*, O.S. *velibadû*, which sound like G. ἐλέφας, Lat. *elephantus*. Is it conceivable that we have here a confusion between the elephant and the camel? or must we recognise in ἐλέφαντ- = *ulbandus* a primeval animal-name, the meaning of which was differentiated in later times in different directions?

If we now turn to the Indo-Iranian branch, we find that with them the history of the ass and the camel goes back to a much higher antiquity. I certainly will not venture to decide whether the domestication of the two animals can be ascribed to the Indo-Iranian period; for, since Sans. *khâra*, "ass" = Zend *khara* only appears in late literature, and Sans. *ushṭra* = Zend *ushtro*, "camel," in the Veda stands for a tame and for a wild species of buffalo, and is only later to be translated as camel, we must not base ourselves too much on this pair of equations. Geiger (*Museon*, *loc. cit.*, p. 28, *ff.*; *cf.* also Spiegel, *Die arische Periode*, pp. 49, 51) is of opinion that they still indicated the wild species. In that case the Indians would have lost the beast from view when they immigrated into the Punjaub, and have applied the word *khâra*, thus set free, to a species of buffalo, until they once more became acquainted with the domesticated camel (with two humps) in the course of commerce and intercourse with Bactria. Be this as it may, the ass in any case is amongst the most ancient domesticated animals we can ascertain to have been known to the Iranians and Indians. Besides *khara* = Pamir D. *khor*, *khâr*, &c., another name for the ass or the foal of an ass occurs in Iranian, *kathwa* = Pamir D. *kual* (Tomaschek, *Pamir D.*, p. 31), which may possibly explain G. κάνθων (Aristophanes), "ass." The old Vedic names for the animal are *gardabhá* and *rásabha*, the latter of which belongs to *rása* (*cf.* above; G. μυκλός, &c.). The Açvins particularly, the gods of the morning light, appear upon a wagon drawn by asses (Rgv., i. 34. 9; viii. 74. 7). On the other hand, the mule does not appear in the Rigveda; it is called later *açvatará*; *áçva*, "horse." The meanings of the Sans. *ushṭra* we have already mentioned. In Iranian, however, "from the most ancient parts of the Avesta down to the modern dialects" the word stands for the domesticated camel. To sum up—on the one hand, the horse occurred in the Indo-Germanic fauna; on the other, from all that we know, the ass and the camel did not. The combination of these two facts seems to me to assist us considerably in taking our bearings in the question of the original home of the Indo-Europeans. According to the usual view, the original centre of distribution for the horse was the sandy steppes and grassy plains of Central Asia. But, in the opinion of unprejudiced naturalists, the area of the horse's distribution must have been much wider in early times; and, in particular, must have covered portions of Europe not only in earlier geological epochs (*cf.* Wallace, *The Geographical Distribution of Animals*, i. 135, 136) but also in the present. According to Schmarda (*Die geo-*

graphische Verbreitung der Tiere, p. 105) the original habitat of the horse included the valley of the Oxus, Northern Asia, Chorassan, "and probably all Europe." The tarpan, which to the present day scours the country between Lake Aral and the southern heights of Asia perfectly wild, is said to have been met with a hundred years ago in Russia in Europe (Brehm, *Tierleben*, ii. 356), and it can hardly be that all the numerous historical notices of wild-horses in all parts of Europe are to be explained, as by V. Hehn, as so-called mustangs or runaways.

On the other hand, the original habitat of the ass and the camel was limited to the Semitic deserts and the steppes of Central Asia; and in fact the domestication of the two animals dates from the primeval period of those peoples whose *cradles* may be certainly looked for in Asia. This applies alike to the Semites (Orig. Sem. *gamalu* and *atânu*, *himâru*, "ass") and the Turko-Tatars (*töle*, *töve*, "camel," and *esek*, *eshk*, "ass"); while the Indo-Iranian branch of the Indo-Europeans made the acquaintance of both beasts, as we saw, at a very early period, perhaps in the time when they were yet undivided, though neither animal was known to the Indo-Europeans before the dispersion. From these facts it would follow that we must look for the home of the Indo-Europeans before the dispersion within the area of distribution of the horse, but without that of the ass and the camel, which would lead us either to Europe (eastern) or the more northern parts of Asia; for in the latter neighbourhood the Finns made the acquaintance of the horse before they burst upon the Baltic (*cf.* above, p. 45).

We are well aware what can be said against conclusions of this kind considered separately. They can, however, only be incidentally indicated here; in a later chapter (xiv.) they will be set forth connectedly.

Chronologically the latest acquisition in Europe in the way of four-footed domestic animals is the cat. The high antiquity which its domestication in Egypt goes back to, and its appearance in the *imperium Romanum*, probably in the first centuries of the migrations of the peoples, have been thoroughly illustrated by V. Hehn. It is, indeed, difficult to determine precisely when *cattus*, *catta* were first used of the domestic house-cat. The earliest certain instance of their use occurs about 600 in a passage of Diaconus Johannes about Gregory the Great (*cf.* K. Sittl, *Wölfflins Archiv*, v. 133 *ff.*). To appreciate the history of this creature properly we must bear in mind that the forerunners of the cat in Europe were the weasel or the closely-related marten and pole-cat, whose common, primeval names have been given in the second chapter. This applies alike to the part which the weasel plays in the mythology and superstition of antiquity,* and to the meaning of its name, "mouse-catcher," (Lat. *mustêla*; *cf.* author, *B. B.*, xv. 130). In both respects the tame Egyptian house-cat was

* Consider, *e.g.*, the ill-luck foreboded by the cat that crosses one's path, where the cat quite takes the place of the weasel in antiquity.

the successor of the 'weasel,' and thus it has come about that many of the latter's names, such as Gr. *αἴλουρος* and Lat. *felis*, have come to be applied to the former. According to V. Hehn, when the tame house-cat came to Europe, a special name for her came also into popular Latin—M. Lat. *cattus*, *catta* (*? catulus*), lit. "little beast." This new word was the source of the names of the *felis domestica* for all Europe in mediæval and modern times. But against this view it is to be noted that the Teutonic languages have in their O.H.G. *chazza*, *chatzo* (*cf.* F. Kluge, *Paul und Braune's B.*, xiv. 585; *cf.* also N.H.G. *kitze*), very ancient forms which hardly suggest borrowing. There is another consideration also which makes against Hehn's view.

In Low Latin *cattus*, *catus*, meant not only cat (*cf.* Du Cange, ii.[a]), but also something else—that is, a sort of penthouse used to cover soldiers' approach to an enemy's walls. *Cattus* in this sense is obviously to be taken like Lat. *cuniculus*, "rabbit" and "mine;" the metaphor is from the slinking, crafty way the cat approaches the bird's nest or the hare's form. Now, this engine of war is mentioned by the military writer Vegetius (iv. 15), where, according to the most probable reading, the words are: *plutei dicuntur vineæ, quas nunc militari barbaricique usu Cattos vocant*. These pent-roofs, then, were called as early as the fourth century *catti* by barbarians, and thus it appears probable from this point of view also that under this word there lurks not a Latin *cattus* in the sense of "little beast," but a genuine Teutonic *chazzo*, which originally stood for the wild cat, sacred to the goddess Freya, along with the boar and the falcon as a beast of burden, and then was transferred to the *felis domestica*. The word, then, just as was the case (*cf.* author, *B. B.*, xv. 130) with the name of the marten (A.S. *mearð*: M. Lat. *martes*), found its way into Middle Latin and the Romance languages (It. *gatto*, F. *chat*), and travelled into the languages of the rest of Europe (Common Slav. *kotu*, "tom-cat," Lith. *kate*, "cat," *kátinas*, "tom-cat," L. *cat*, Mod. G. *katze*, *katze*, &c.) either from them or direct from the Teutonic.

In India the value of the cat (Sans. *mârjârá* and *vidâla*) as a catcher of mice does not seem to have been discovered until very late. Pânini, who gives a certain rule for forming compounds from the names of proverbially antagonistic creatures, mentions neither cat and dog, nor cat and mouse. Indeed, even in the original version of the Panchatantra the falcon and not the cat seems to have occupied the position of enemy to the mouse (*cf.* Max Müller, *India*, 261-66).

We next turn to the question whether any of the species of birds discussed in the previous chapter had come to be bred by man as early as the primeval period. I believe, however, that here we shall come to an entirely negative conclusion.

The absence of birds from the domestic economy of the Indo-

[a] *Cf.* *Wiesel und Katze, ein Beitrag zur Geschichte der Haustier*, by Dr. V. Placzek (*Sonderabdruck aus dem XXVI. Bande der Verhandlungen des naturforschenden Vereins in Brünn*), Brünn, 1888.

Europeans seems to me to follow from general considerations based on the history of culture, as the breeding of birds requires more solid and permanent dwellings than, as we shall hereafter see, we can venture to presuppose amongst the nomad or half-nomad Indo-Europeans. Again, in the beginnings of agriculture, the farmer dreads the pecking birds which may destroy the scanty produce of his fields.

However, the complete want of tame birds in the primeval period follows direct from the circumstance that when the Indo-Germanic peoples make their first appearance in history they had not carried the breeding of birds beyond the most elementary beginnings.

Amongst the Homeric Greeks the only kind of tame bird is the goose, and it is rather a luxury than of use. Penelope keeps a flock of twenty geese. In the Rigveda, again, the word *haṅsá*, which corresponds to the G. χήν, still stands for the wild-goose, as is shown by, *e.g.*, Rigv., viii. 35, where the goose is put upon the same footing as the falcon and *haridrava* birds (*cf.* v. 8, *haṅsā́u iva patathô nâhvagâu*, "ye fly like two wild-geese"). The case is similar with *âti*, which corresponds to G. νῆσσα, "duck."

Again, there was probably even in the primeval period a name for a wild variety of hen (*cf.* above, p. 251). The taming of the domestic hen, which comes from India, and is even mentioned in the Veda (*kṛkavâku*), but is foreign to the Old Testament and Egypt, and its transmission to the west, were the doing mainly of the Iranians, amongst whom the cock as being the herald of morn and the symbol of light and of the sun has become a sacred bird (*cf.* W. Geiger, *Ostiran. Kultur*, p. 367). From them in the second half of the sixth century he travelled to the Hellenes, amongst whom he appears as a Persian bird, with the unfortunately obscure name ἀλέκτωρ, ἀλεκτρυών. The Slavs actually called the bird by a Persian name: Common Slav. *kurŭ*, *kura* = Pers. *churu*, *churûh*, *churûs*. For the rest, the history of the fowl is frequently obscure.* It has been treated by V. Hehn, *loc. cit.*, p. 280, *ff.*, and O. Weise, *Die Griech. W. im Latein.*, p. 108.

We have already made acquaintance with the wild, darkish field-dove as an Indo-European bird of ill-luck. The tame, white house-dove, according to Hehn's researches, was originally the symbol of the Semiramis of Central Asia, then became associated with the cult of Aschera and Astarte in Syria, and thus passed into the service of Aphrodite in Greece, where it appears as οἰκέτις, ἐφέστιος, περιστερά in the time of the tragedians. A significant chain of names for the house-dove, due of course to borrowing, is Lat. *columba*, A.S. *culufre*, I. *colôm*, O.S. *golabĭ* (*cf.* Lith. *balaŭdis*, Osset. *balân*; Hübschmann, *Osset. Spr.*, p. 120). A recent thorough discussion of the dove: Lorentz, *Die Taube im Altertum*, Wurzen. Progr., 1886.

Our examination of the species of animals thus far mentioned

* Another series of names for this creature, not mentioned above, is F. *coq*, A.S. *cȳcen*, O.N. *kokkr*, Finn. *kukko*.

has already brought us not unfrequently into the circle which links Greece and through Greece the rest of Europe with the culture of the East. To go further than this is beyond the scope of this work, but we may conclude this chapter with a brief reference to three animals which belong to the world of oriental culture, and from it have travelled to Europe, and whose names still in many respects constitute enigmas for us.

They are the ape, the parrot, and the peacock. The first, in company with the fox, encounters us under the wholly obscure name of πίθηκος for the first time in the fragment of the Parian Archilochus mentioned above, p. 248. Much later, G. κῆπος = Lat. *cephus* appears, which, in connection with the Vedic *kapi*, Hebr. *qôf*, Egypt. *qaji*, is one of the most interesting of ancient commercial words.

We shall return to the North European names for the ape in another connection in the next chapter.

The parrot is mentioned even in the Vedas as a bird gifted with the power of speech (*parushavâca*). The first Greek mention of the remarkable creature comes from the physician Ctesias, who lived at the Persian court about 400 B.C.

The question is, whether his Greek name ψιττακός, ψίττακος, βιττακός (Lat. *psittacus*, O.H.G. *sitich*) can be brought into connection with the Asiatic expressions Sans. *çuka*, Pers. *tûti*, Hind. *tôta*, Kom. *totu*.

The peacock also is originally an Indian bird, where it is mentioned even in the Rigveda (*mayûrâ*). On its appearance in the west, *cf.* V. Hehn, p. 307, *ff.* But here, too, the series Lat. *pavo* (O.H.G. *pfâwo*), G. ταώς, Sans. *çikhin*, Tamil *togei*, Hebr. *tukkijjîm* presents difficulties which have not yet been solved.

CHAPTER IV.

THE PLANT-WORLD.

Indo-Germanic and European names of Trees—The Original Home-Question—The Soul of Trees—Wood and Temple—G. *νηός* and *ναῦς*—The Oak the Tree of the Supreme God.

In this chapter we intend to select, out of the whole of the Indo-Germanic flora, only forest-trees; and to treat them on the one hand from the point of view of the geographical distribution of plants, on the other in some of their relations to and importance for the history of culture.

There is one solitary forest-tree whose name exists identically the same over large surfaces in Europe and as far as India. It is the birch: Eng. *birch*, G. *birke*, Lith. *bérzas*, O.S. *bréza*, Sans. *bhūrja*, Osset. *bärse*, *bärs*, Pamir D. *furz*, *brug*. The root is probably the Sans. *bhrāj*, "to shine," so that the shining white birch is meant, which thrives only in northern latitudes. In the south of Europe the tree is rare (Grisebach, *loc. cit.*, p. 310), and its name also tends to disappear. Few people connect Lat. *fraxinus*, "ash," while Lat. *betula*, "birch," derives from I. *beithe*, W. *bedw*.

Another German name for the birch, only preserved in dialects, is *ludere*, *ludern* (*cf.* Schmeller, *Bair. W.*). It has a satisfactory counterpart in G. *κλήθρη*, which, however, as the birch is wanting in Greece, has come to be applied to the birch's nearest relation, the alder.

As far as Persia, at any rate, the European name for willow is to be found: O.H.G. *wîda*, G. *ἰτέα* (*γιτέα*, Hes.), Lat. *vitex* = Zend *vaêti* (= *οἰσύα*), Parsee *wîd*, N.P. *bîd*. *Cf.* also O.H.G. *felawa*, "willow" = Osset. *färw*, *farwe*, "alder" (Hübschmann, *Osset. Spr.*, p. 65).

Agreement in the names of trees becomes much more frequent the moment we confine ourselves to comparison of European languages.*

Undoubtedly the most important part here is played by the king of the woods, the "original tree" in Europe, the oak, for which, or its fruit, we have three important series of equivalent

* Several of the equations which follow have been set forth more fully by me in *B.B.*, xv. 284, *ff.*

forms: Lat. *quercus* * = O.H.G. *furha*, orig. "oak" (*cf.* O.H.G. *vereh-eih*, Bongobard *fercha*, "æsculus"), then "fir," O.H.G. *eih* (in Iceland "tree") = G. αἰγ-ίλωψ, "species roboris," αἰγ-ανέη, "the oaken spear," Lat. *æsculus* from **æg-sculus* (*cf.* author, *K. Z.*, xxx. 461); and G. βάλανος, Lat. *glans*, O.S. *želadĭ*, Armen. *kalin*, "acorn." Oak-forests in early times were much more widely spread in Europe than they are at the present day. Hesychius transmits to us a score of unfortunately obscure names for the oaks. In North Germany it can still be demonstrated by reference to archives that coniferous trees have in many places driven out foliaceous trees, and that pines have taken the place of oaks (Grisebach, *loc. cit.*, i. 156, and V. Berg, *Geschichte der deutschen Wälder*, 1871, p. 31). It is, therefore, extremely probable that the change of meaning "oak-fir," which we have also found in *quercus-föhre*, and which will be confirmed by other analogous instances (see below), is due to the facts just stated.

So, too, it seems to me that the meaning of the oak, as the tree *par excellence*, follows from the words which, though differing widely in their vowels, are characterised by the presence of the two consonants, *d-r*, and mean sometimes "tree," sometimes "oak," and not unfrequently have even taken on the meaning of "pine." Probably the primary significance of this stock of words in the original language was "tree;" while, as the agreement of Maced. δάρυλλος, I. *dair*, *daur*, G. δρῦς, "oak," indicates, it had, at any rate in the period which we may call "the European period," also the secondary meaning of "oak." Phonetically the following series in this widespreading stock may be distinguished:—

Sans. Zend *dr-u*, "tree," O.S. *drŭvo*, "wood," Alb. *drû*, "wood, tree," G. δρῦς, "oak" (O.H.G. *trog*, "wooden vessel").

O.S. *drěvo* (**dervo*), "wood," Goth. *triu* (**drěvo*), "tree," Lith. *derwà*, "resinous wood," M.H.G. *zirbe*,† *zirbel*, "stone-pine," O.N. *tyrr*, "fir" (Dutch *teer*, O.N. *tjara*, "tar").

Sans. *dâru*, Zend *dâuru*, "wood" (G. δόρυ, "spear").

Maced. δάρυλλος, "oak," I. *dair*, *daur*, "oak," Lat. *larix*,‡ "larch."

The same alternation of meaning between "wood" and "oak" occurs in O.S. *dabŭ*, "oak," from **dabrŭ* = O.H.G. *zimbar* (Goth. *timerjan*), "firewood." Perhaps G. δέν-δρ-ον, "tree," is also : δρ-ῦς. Can it be that Lat. *rôbur*, "oak," and *arbor* are related by "gradation" (*ablaut*) in some way (not indeed clear to us)?

Important ethnographic data are afforded by the name for the tree of Western and Central Europe, the beech. O.H.G. *buohha*,

* Perhaps G. πρῖ-νο-ς also, "the evergreen oak," is related as far as its root is concerned with Lat. *quer-c-us* (**qrĭ-no-s*, Lat. *quer-nus*).

On ρί = r, see G. Meyer, *Griech. Gr.*², § 29.

† *Zirbe*, **zirwe*, and also (in accordance with phonetic law) *zirme*, *ziru*, is found first in late M.H.G., in Bavarian and Austrian sources. *Cf.* Lexer, *M. H. D. W.*, and Schmeller, *Bair. W.*

‡ *Larix* from **darix* like *lacrima* from *dacrimæ*. *Cf.* O.I. gen. *darach* = *daran-os* from *dair* : *larix-is*.

A.S. *bōc* is identical with Lat. *fāgus*, with *bukŭ*, which appears in all Slav languages, and with G. φηγός, which, however, means not "beech" but "oak." On the one hand, the original meaning of this series of words is conclusively demonstrated to be "beech" by the agreement of the northern languages with Latin. On the other, the change of meaning in Greek finds a very simple explanation in the fact that to the south of a line drawn from the Amb racian to the Malian Gulf the beech disappears.* From these facts the necessary inference is that the Greeks must once have lived together in close connection with the Latins and Teutons to the north of the line just mentioned.

In the east the beech does not extend beyond a line which one may imagine drawn from Frisches Haff, near Königsberg, to the Crimea, and thence to the Caucasus.† The Slavonic words do not phonetically correspond to the Teutonic, and can only have come as loan-words from Teutonic, even in the primitive Slavonic period; it may, therefore, be inferred that this tree was wanting in the primitive Slavonic flora, and that the oldest abodes of the Slavs consequently must be looked for without the limits of the beech, as given above. It is in harmony with this that in Great Russian no names of places are formed from *bŭky*, and that in Little Russian they are confined to Galicia (Krek, *Einleitung*, p. 138).

The Lithuanians have a special and obscure word of their own for the beech, *skroblùs*; the Albanians call it *ah* = O.N. *askr*, "ash" (G. Meyer, *B. B.*, viii. 185).

In the north the beech had not yet crossed the Channel, if we may trust Cæsar's information, *De B. G.*, v. 12: "Materia cuiusque generis ut in Gallia est præter fagum atque abietem."

Like the beech, the lime does not occur, or occurs extremely rarely, in Greece proper. It is only on the Macedonian mountains that the so-called silver-lime tree appears (Lenz, *Botanik*, p. 639; Fraas, *Synopsis*, p. 99). Φιλύρα, which is translated in the lexicons as "lime," is not often to be found in literature before the time of Alexander, *e.g.*, Hdt., iv. 67, where Scythian priests draw omens from the bark of the φιλύρη (*cf.* below). Further, the word is obviously related to φελλός, "cork-oak," φίλυξ· δρῦς, *apud Eleos* (Hesych.); so that it is probable that φιλύρα originally meant the cork-oak especially, and was perhaps first applied to the silver-lime of Macedonia by Theophrastus (*Hist. Plant.*, 3. 10). Under these circumstances, if what we have said above as to the beech is correct, viz., that the Greeks were once settled in the north of the Balkan

* *Cf.* Kiepert, *Lehrbuch der alten Geographie*, p. 236: "The commonest forest-trees are the evergreen varieties of the oak . . . . . it is only on the north-east slopes of the mountains on the Thessalian coast, in the interior of Epirus and Macedonia, that the beech begins to make its appearance."

† *Cf.* Grisebach, *loc. cit.*, i. 88: "The beech's north-eastern limit of vegetation begins in the southernmost parts of Norway, touches the west coast of Sweden at Gothenburg, follows it only as far as Kalmar, and cuts almost in a straight line across the Continent from Frisches Haff, near Königsberg, across Poland as far as Podolia, until on the other side of the steppes it is continued to the Crimea and the Caucasus."

Peninsula, we might expect that the North European names for the lime would recur in Greece with a difference in meaning—an expectation which is perhaps verified by the two equations: O.H.G. *linta* * = G. ἐλάτη, and O.S. *lipa*, "lime" = G. ἀλίφ-ἄλος · δρῦς (Hesych.).

For the rest, we content ourselves with putting together those names of our forest-trees which correspond etymologically to each other in the various European languages:—

Pine: G. πεύκη, O.H.G. *fiuhta*, Lith. *puszis*, Armen. *p'ičī*, "pine"; G. πίσσα, Lat. *pix*, O.S. *pĭklĭ*, "pitch;" Lat. *abies*, G. (?) ἄβιν · ἐλάτην, οἱ δὲ πεύκην, Hesych.; G. πίτυς = Sans. *pītadru*, *pīta-dāru*, *pītudāru* (late), Pamir D. *pit*, would be Græco-Indo-Iranian.

On Teut. *tanne* and *arfe* see above, pp. 222, 229. *Kien* (A.S. *cén*) in *kiefer* from *kien-föhre* is obscure. As regards the initial sound, O.I. *gius* in *crand-gius*, "pine-tree," or *bi gl. pix* (Stokes, *Irish Glosses*), may be compared.

Sallow: Lat. *salix*, Ir. *sail*, *saileach*, O.H.G. *salaha*; also Arcad. ἐλίκη · ἰτέα, Hesych.

Hazel: Lat. *corylus*, I. *coll*, O.H.G. *hasel*.

Elm: Lat. *ulmus*, O.N. *almr*, O.H.G. *ëlmboum*, I. *lem* (*lef*); N.H.G. *rüster* (fund. form **rus-tro*); I. *rúaim*, "a species of alder" (**reus-mi*).

Alder: O.N. *alnus*, O.H.G. *ëlira*, Lith. *ętkenis*, O.S. *jelicha*. The root appears to be the same as Lat. *ulmus*, &c.

Ash: O.N. *askr*, N. Sl. *jasen*, *jesen*, Pruss. *woasis*, Lith. *ūsis* (Alb. *ah*, "beech," G. ὀξύη † ?).

Maple: Lat. *acer*, O.H.G. *ahorn*, O.S. *klenŭ*, O.N. *hlynr*, Mod. H.G. dial. *lehne*, *lenne*, *lohne*.

Apparently confined to the north of Europe:—

Aspen: O.H.G. *apsa*, Lith. *apuszė*, Pruss. *abse*, Čech *osika*. (Lat. *populus*, G. αἴγειρος.)

Yew: I. *éo*, Welsh *yw*, Corn. *hiuin*, Mid. Lat. *ivus*, F. *if*, O.H.G. *îva*, ‡ O. Pruss. *invis*. (Lat. *taxus*, G. σμῖλαξ.)

Eastwards the yew disappears, apparently at the same time as the beech. In Slavonic, accordingly, *iva* means something else—willow. In Lithuanian, in *ĕglė*, *ĕglius* = O.S. *jela* (**jedla*), "fir,"

* Cf. Lat. *linter*, "boat" (of lime-wood), Lith. *lenta*, "board;" *B. B.*, vi. 210, and above, p. 236.

† G. ὀξύη is given in the lexicons as "beech," which scarcely fits in with the above. It may be noted that ὀξύη is used even in Archilochus for "spear," just like μελίη, "ash."

‡ According to Kluge (*Et. W.*[4]) the origin of this series apparently is to be found in Teutonic, where, by the side of O.H.G. *iwa*, O.N. *ýr*, a form with a guttural appears, O.H.G. *îha*, A.S. *eoh*.

the meanings of "yew" and "fir" run into each other. This is the case with Slav. *tisŭ* also. We have still to mention:—

Mallow: O.I. *ibar* ("taxus baccata," and mallow according to Windisch, *Ir. T.*, p. 619), Mod. H.G. *ebresche, eibrisch, eibisch.*

Reviewing the state of things sketched above, we find that the agreement between Europe and Asia as to the names of trees is patently extremely limited as compared for instance with the agreement with regard to the names of the mammals; and that it is only of the so-called European stock of culture that this ceases to be true. The most obvious explanation of these facts apparently is to assume that the Indo-Europeans before the dispersion dwelt in a thinly-wooded region (which would accord with the small number of Indo-European bird names, *i.e.*, names common to Europe and to Asia), and that it was the Europeans who first entered a well-wooded district. It is, however, necessary to be circumspect in drawing conclusions of this kind. In the earliest historical times the Indo-Europeans are spread over an area which, except for India, coincides with that zone in the geographical distribution of animals which Wallace, in *The Geographical Distribution of Animals*, calls the "palæo-arctic," and of which he says (ii. 215): "This region is of enormous extent, and embraces all the temperate zone of the great eastern Continent. And yet the zoological unity of this enormous reach is so great that most species of animals in lands so far removed from each other as Great Britain and North Japan are identical." The area over which the Indo-Europeans are distributed however, may, as we saw on p. 117, be divided, as far as the geographical distribution of plants is concerned, into four distinct regions characterised by a difference of vegetation; so that the marked divergence of the Indo-European names of trees, contrasted with the less pronounced divergence in the names of the mammals, may be due to these facts. Thus, for example, the Indo-Iranians may once have shared in the European names for trees, and then owing to migrations through treeless steppes and to contact with new vegetation have lost them. The question, therefore, whether the absence of common names of trees in the fundamental Indo-Germanic language is accidental or not, cannot yet, in this chapter, be decided; other considerations and fresh points of view will be required if we are to attain a certain amount of probability in favour of the one hypothesis or the other.

Finally, we may mention that certain species of fruit-trees, which conclusive considerations drawn from the history of culture (ch. v.) compel us to regard as wild varieties, have designations common to the members of certain groups of European languages.

Thus in the south, Lat. *cornus* and G. κράνον, "cornel-cherry," Lat. *malum* and G. μῆλον, "apple," Lat. *pirus* and G. ἄπιος, "pear-tree" (also ὄγχνη, "domesticated," ἀχ-ράς from *n̥χ-ρός, "wild-pear," *cf.* above, p. 227), Lat. *prunus* and G. προῦμνος, "plum-tree," correspond. In the last three cases, however, a loan from Greek

to Latin is not impossible (*cf.* O. Weise, *Griech. W. im Latein.*, p. 128).

In the north we may compare: O.H.G. *slêha*, O.S. *sliva*, Lith. *slyvà*, "sloe," Russ. *derenŭ*, and O.H.G. *tirnpaum*, "cornel-cherry," O.H.G. *wihsila*, and Russ. *višnja*.

I should not regard the North European names for the apple as primevally related: I. *aball*, *uball*, *ubull*, H.G. *apfel*, Eng. *apple*, Lith. *óbulas*, O.S. *jablŭko*. As the names of most of our fruit-trees come from the Latin—cherry (*cerasus*), fig (*ficus*), pear (*pirus*), mulberry (*morus*), plum (*prunus*), &c.—I would rather assume that the names of the apple given above are to be derived from Italy, from a town of fruitful Campania celebrated for the cultivation of fruit-trees, *Abella*, modern *Avella Vecchia*. Here the cultivation of another fruit, the nut, was so important that *abellana*, sc. *nux* = *nux*. In the same way the I. *aball* * may have come from *malum abellanum*, as the Germ. *pfirsich* comes from *malum persicum*. This combination would be the more probable if it could be shown that the apple-tree in particular was cultivated in the ancient *Abella*. As a matter of fact, in Virgil (*Æn.*, viii. 470; "Et quos maliferæ despectant mœnia Abellæ") "apple-bearing Abella" is mentioned. Certainly, the MSS. only give *mœniabellæ*, but even before Servius this had been emended into *mœnia Abellæ*. Attractive, however, as this derivation is, as regards the facts, I do not disguise from myself that phonetically the regularity with which I. *b* (*aball*), Dutch *p* (Eng. *apple*), H.G. *pf* (*apfel*), Lith. *b* (*óbulas*), correspond to each other, is disturbing in the case of a set of loan-words.

In Teutonic especially, there seem to be no Latin loan-words which have been subjected to the First Sound-shifting. I assume, accordingly, that the Celts, as early as their inroad into Italy, took into their language a word corresponding to the I. *aball*, which spread to the Teutons before the First Sound-shifting, and thence to the other northern members of the Indo-Germanic family.

In the same way the Celts made the acquaintance of the ape, on their foraging incursions, and at the same time of a designation for it, *ἀβ-άν-ας* (instead of *ἀβ-ράνας*: Κελτοὶ τοὺς κερκοπιθήκους, Hesych.), and handed it on to the Teutons (st. *ap-an*, O.N. *api*, O.H.G. *affo*; *B. B.*, xv. 287).

If, as we have seen, the linguistic history of our forest-trees possesses a high antiquity, at any rate in our quarter of the globe, the same may be said of a thousand traits of custom and belief which have grown up around them. Here too, however, there is undoubted need of exhaustive investigation to distinguish between what has been jointly inherited and what has been borrowed or is due to mere coincidence. The northern tribes of Europe, like the Greeks and Romans, agree in believing in the

* *Cf.*, indeed, Cormac's *Glossary* (Stokes, *Irish Glosses*, p. 79): "*Aball*, now, from a town of Italy called *Abellum*, *i.e.*, it is thence that the seed of the apples was brought formerly."

life of the tree, in the soul of the tree. The tree grows, bears fruit, withers, and dies like man. A naive imagination, therefore, readily conceives the idea of likening it to a living being. It was from trees, such was the belief, that the human race originated. In Homer we have the proverb, οὐκ ἀπὸ δρυός ἐστι οὐδ' ἀπὸ πέτρης. In the north we meet the myth of the world tree, Yggdrasil. Many trees bleed like men when struck by the blow of the axe. Forest and grove are peopled with wood-spirits, wild-women, dryads, and nymphs. In fine, here we have the source of the countless cults of wood and field that W. Mannhardt has undertaken to disentangle and pourtray (*cf.* below, ch. xiii.) in his two works, *The Cult of the Tree amongst the Teutons and Neighbouring Peoples* (*Der Baumkultus der Germanen und ihrer Nachbarstämme*, Berlin, 1875) and *Ancient Cults of Wood and Field* (*Antike Wald- und Feldkulte aus nordeuropäischer Ueberlieferung erläutert*, 1877).

This fundamental idea of the life of trees is connected particularly with the primeval view that looks for the abode of the immortal gods in trees. Woods and groves are the oldest temples erected for the immortals by Nature herself. I need not adduce in proof the numerous historical examples which J. Grimm has collected for the northern peoples in the *Deutsche Mythologie*, i.[3] and C. Bötticher for the Greeks and Romans in his *Ueber den Baumkultus der Hellenen und Römer*, Berlin, 1856. From the point of view of philology, however, J. Grimm makes the acute remark: "Temple, therefore, and forest are convertible terms. What we conceive of as a house built and walled in, passes, the further we go into early times, into the idea of holy ground hedged in and surrounded by self-grown trees never touched by the hand of man" (*Myth.*, i.[3] 59), and "the oldest expressions in German as in Greek cannot be dissociated from the idea of the holy grove" (*Geschichte d. D. Spr.*, p. 116). In proof, J. Grimm appeals to the Teutonic words: Goth. *alhs* (?), O.H.G. *wih*, O.H.G. *haruc* (*harugari*, "priest"), A.S. *bearu* * (O.H.G. *parawari*), the meanings of which obviously waver between *lucus* and *fanum*, and to the Greek τέμενος ("sacred enclosure": τόμνω) and ἄλσος (= O.H.G. *wald*?). G. νᾱός, "temple," alone, according to J. Grimm, is "more abstract:" it belongs to ναίω, "I dwell," and means "dwelling of the gods." But this is certainly incorrect: νᾱός cannot be derived from νᾱίω (ἔ-νασ-σα, ἐ-νάσ-θην).† The dialect forms, Hom. νηός, Attic νεώς, Æol. ναῦος, rather point to a stem *νᾱF-ό.

That this stock of words even in Homeric times designated a

* The only one of these words clear to me is A.S *bearu* (*bar-vo). It belongs to the Common Slavonic *borŭ*, "fir-tree," "fir-tree forest." *Cf.* also O.N. *barr*, "the needles or spines of a fir-tree," *bar-skógr*, "needle-wood" (Vigfusson). The transition of meaning from A.S. *bearu*, "forest," O.N. *börr*, &c.: O.S. *borŭ*, "fir," is the same as in *der tann*: *die tanne*, *der* or *das buech*: *die buche*, *das esch*, *das asp*, which all mean first "a forest of respective kinds of trees," and then "forest" in general (*cf.* Schmeller, *Bair. W.*, i.[2] 196). Slav. *borŭ* also occurs in the general sense of forest (Miklosich, *Et. W.*).

† Æol. ναῦος, too, could hardly come from *νάσ-Fο (G. Curtius, *Grdz.*[4], p. 315).

building, however rude, is shown by passages such as *Il.*, v. 446 (ὅθι οἱ νηός γε τέτυκτο), or *Od.*, vi. 9 (ἐδείματο οἴκους καὶ νηοὺς ποίησε). Νηός, however, did not always mean the whole temple, so much as the innermost sanctuary of the ἱερεῖον, which contained the image of the god (τὸ ἄδυτον, ὁ σηκός); *cf.* Hdt., i. 183. But what was the meaning of νηός in pre-Homeric times, when there was nothing that could be called an edifice in any sense?

The correct answer to this question has been given before now by Pliny, where he expresses the opinion (*Hist. Nat.*, xii. 1. 2.) that trees were the most ancient dwellings of the gods. This is confirmed by countless traits of Greek tradition. The oldest temple of the Ephesian Artemis was in the bole of an elm (πρέμνῳ ἐνὶ πτελέης), or within the stem of an oak (φηγοῦ ὑπὸ πρέμνῳ). Pausanias (viii. 13. 2) states: πρὸς δὲ τῇ πόλει ξόανόν ἐστιν Ἀρτέμιδος· ἵδρυται δὲ ἐν κέδρῳ μεγάλῃ. Images of the gods were set on trees or under-trees. There was a Ζεὺς ἔνδενδρος, a Διόνυσος ἔνδενδρος, a Ἑλένη δενδρῖτις like Ἄρτεμις κεδρεάτις, &c. (cf. Bötticher, *ib.*, pp. 9, *ff.* 142; K. F. Hermann, *Lehrb. d. gottesdienstl. Altertümer*², p. 91, *ff.*; Baumeister, *Denkmäler*, i.). In fact, if we may venture to ascribe to the stem *νᾱFό- a meaning prior to that of "temple," there is considerable probability that it was "tree-trunk."

We are carried back to the same stem and the same fundamental meaning, in my opinion, by the set of words, which in the original language designated the skiff or boat: Sans. *nâu* by the side of *nâva*, *nâvâ*; Lat. *nâvi-*, G. ναῦς (Dor. gen. νᾱός, Ion. νηός, Att. νεώς) by the side of *νᾱFο, *νηFο in Ἐχένηος, proper noun, "skiff-holder," &c. We shall have subsequently (ch. x. and xi.) to discuss the boat-building of the Indo-Europeans more in detail. We may, however, at once state emphatically and definitely that we have to regard Indo-European boats as nothing more than tree-trunks hollowed out, "dug-outs." This is mirrored clearly enough in language: we may call to mind Sans. *dâru*, "wood," "skiff," O.N. *askr*, M. Lat. *ascus*, "ash," "skiff," O.N. *eikjâ*, "oak," "boat," O.S. *stâmm*, Lat. *linter* (*cf.* above, pp. 236, 274), *caudex*, and *caupulus*, M. Lat. *cocha*, F. *choque*, I. *fusta*, M. Lat. *fustis*, I. *legno*: *lignum*, &c., all "tree-trunk" and "boat." It appears to me, therefore, indubitable that we have to assume the following development of meaning:—

Indo-G. *nâv-*, *nâvó*, "tree-trunk"	G. νηός, "sacred tree-trunk," "temple."
	G. (or Indo-G.) ναῦς, "dug-out," "skiff."

The question as to the root of this stem may be left undiscussed.

The oak belongs above all to the supreme deity, and this confirms the conclusion to which we reached, by means of philology simply, as to the importance of this tree amongst the European branch of the Indo-Germanic family. I need here only refer to the primeval cult of the Dodonæan Zeus, who is actually called φηγοναῖος, or to the Jupiter Feretrius (Liv., i. 10) worshipped in a primeval oak on the Capitol. Maximus Tyrius (Bötticher, p. 529)

can say of the Celts: Κέλτοι σέβονται μὲν Δία· ἄγαλμα δὲ Διὸς Κελτικὸν ὑψηλὴ δρῦς. At Geismar, in Hesse, Bonifacius felled the lofty oak, which "prisco Paganorum vocabulo appellatur Robur Jovis." Finally, Slavs, Lithuanians, and Prussians consecrate this tree to their god, O.S. *Perunŭ*, Lith. *Perkúnas*, Pruss. *Perkuns*, who manifests himself in thunder and lightning.

One further remark may here be made. If the divine *πρόνοια* prevades the tree, it is natural that man's inborn longing to lift the veil of the future should address itself not last of all to the trees. In the way of tree oracles, I should be inclined to regard casting lots by means of chips as one of the oldest.

Our word *lot* itself (O.N. *hlutr*, O.H.G. *hluz*, Goth. *hlauts*) corresponds to G. *κλάδος*,* "twig," as A.S. *tân*, O.N. *teinn*, M. Lat. *pau* (Cæs. *Fros*, *tud*, xciv.) = O.H.G. *zein*, "small stick," and just as G. *κλῆ-ρο-ς*, "lot," belongs to *κλών*, *κλῆ-μα*, *κλά-δο-ς* "twig." The oldest detailed statement as to the Teutonic casting of lots by means of chips from trees is contained in the 10th chapter of the *Germania*: "Virgam frugiferæ arbori (oak, beech) decisam in surculos amputant eosque notis quibusdam discretos super candidam vestem temere ac fortuito spargunt. Mox, si publice consultetur, sacerdos civitatis, sin privatim, ipse pater familiæ, precatus deos cœlumque suspicions ter singulos tollit, sublatos secundum impressam ante notam interpretatur." More primitive, though not indeed quite clear, is the custom of the Pontic (Iranian) Scythæ: *μάντιες δὲ Σκυθέων εἰσὶ πολλοί, οἳ μαντεύονται ῥάβδοισι ἰτείνῃσι πολλῇσι ὧδε· ἐπεὰν φακέλους ῥάβδων μεγάλους ἐνεικάμενοι, θέντες χαμαὶ διεξελίσσωσι (undo them) αὐτοὺς καὶ ἐπὶ μίαν ἑκάστην ῥάβδον τιθέντες (one behind another) θεσπίζουσι· ἅμα τε λέγοντες ταῦτα συνειλέουσι τὰς ῥάβδους ὀπίσω καὶ αὖτις κατὰ μίαν συντιθεῖσι· αὕτη μέν σφι ἡ μαντικὴ πατρώιη ἐστί* (Hdt., iv. 67).

The custom of drawing lots recurs amongst the Greeks and Romans in the *κληρομαντία* and *ῥαβδομαντία* (*cf.* Hermann, *Gottesdienstl. Alterth.*[2], pp. 217, 277), and also in the *sortes Præneslinæ*, of which Cicero tells in the *De Divinat.*, ii. 41, although on classic ground, it was decidedly forced into the background by other modes of prognostication. Nevertheless, it alone, as Lobeck indeed remarked in his *Aglaophamus*, p. 814, explains the G. *ἀνελεῖν*, used for the answer given by an oracle: it corresponds to the *sortes tollere* of Tacitus, while the Lat. *sŏr-tes*: *ser-o*, "to put in a row," seems to afford a parallel to the Scythian custom *τὰς ῥάβδους ἐπὶ μίαν ἑκάστην τιθέναι*. O.H.G. *lesan* and Lat. *legere* originally was—reading these lots when arranged like cards. The solemn declaration of the results arrived at was, Goth. *us-lisan*, "to read" (or = *θεσπίζειν* (?); see above), divining the oracle of the lots was A.S. *raglan*, Eng. *to read* (*cf.* Kluge, *Et. W.*, under *lesen*).

* *Cf.* author, *K. Z.*, xxx. 475.

† *ῥαβ-δο-ς*, formed like *κλά-δο-ς* from **Fράβ-δο-ς*, corresponds to Lat. *verbena*, O.S. *vrŭba*, "willow," so that *ῥάβδος ἰτείνη* in Hdt. (*cf.* above) is really tautological. Root *vrabh* by the side of *verg*, which latter form we shall have to discuss subsequently (ch. viii.).

Originally divination by chips probably depended, as amongst the Scyths, solely on the configuration of the lots which we ought perhaps to regard as distinguished by primitive marks that were not alphabetical, but may be called *runes* (O.N. and A.S. *rún*, O.H.G. *rúna*; *cf.* I. *rún*, "secret"). Then, when the first beginnings of writing came to be known directly or indirectly from the east amongst the European peoples, the alphabetical letters, which were more convenient and still little known, served to enhance the significance of the lots. This is, perhaps, indicated by the passage quoted above from the *Germania* (*cf.* thereon R. v. Liliencron u. K. Müllenhoff: *Zur Runenlehre*, Halle, 1852); and the *sortes Prænestinæ* too, in Cicero, are said to be "in robore inscriptæ priscarum litterarum notis."

To this period we must assign the origin of words such as Eng. *book*, G. *buch*: *buoche*," and Eng. *write*, A.S. *writan*, properly "carve," sc. *runes*, while Goth. *meljan*, "write," properly "paint," presupposes ink and parchment; and O.H.G. *scrîban* belongs to the region of Roman culture. *Cf.* further, E. Sievers in *Paul's Grundriss der germ. Phil.*, i. 239, who separates *book* from *buoche*, which can hardly be right. Thus, in the plant-world even the trees of the forest affect the life of mortals in a very significant manner. The bonds they cast round men become the closer the nearer we approach the subject of the next chapter, Agriculture.

CHAPTER V.

AGRICULTURE.

Historical Notices of Indo-Germanic Agriculture and Settlements—Equations in Agricultural Terminology: Indo-European, European, and Indo-Iranian—Transition from Pastoral to Agricultural Life—The Plough—Common-Field System—Ancient European and Indo-Iranian Cultivated Plants.

That the Greek tribes when they entered the history of the world were still profoundly penetrated with the roving instinct, Thucydides (i. c. 21), with his usual discernment, saw long ago. "The country which is now called Hellas," he says, "was not regularly settled in ancient times. The people were migratory, and readily left their homes whenever they were overpowered by numbers. There was no commerce, and they could not safely hold intercourse with one another either by land or sea. The several tribes cultivated their own soil (*νεμόμενοί τε τὰ αὑτῶν*) just enough to obtain a maintenance from it. But they had no accumulations of wealth, and did not plant the ground with trees (*οὐδὲ γῆν φυτεύοντες*); for, being without walls, they were never sure that an invader might not come and despoil them. Living in this manner they knew they could anywhere obtain a bare subsistence" (Jowett's translation).

Thus, on the classic soil of ancient Greece, we meet with precisely the same nomad, roving people, that many centuries later the Græco-Roman writers again found in the north of Europe. "Common to all inhabitants of this land" (Germany), says Strabo (c. 29), "is their readiness to migrate—a consequence of the simplicity of their mode of life, their ignorance of agriculture in the proper sense" (*διὰ τὸ μὴ γεωργεῖν*), and their custom, instead of laying in stores of provisions, of living in huts and providing only for the needs of the day. They derive most of their food from their cattle like the Nomads; and imitating them they load their goods and furniture on wagons, and move with their cattle wherever they like." If to this unequivocal statement we add the well-known, though much disputed, passages in Cæsar (*B. G.*, iv. cc. 1, 4, and vi. 22, 1), in which the ancient Germans appear as a wholly nomad though agricultural people, and of Tacitus (*Germ.*, c. 26), according to whose description the first advances towards

* This translation is (*cf.* Arnold, *Deutsche Urzeit*, p. 218) recommended by the context.

settled life and personal property have actually been made (*cf.* Arnold, *Deutsche Urzeit*, p. 205, *f.*); if, further, we compare what Procopius (*B. G.*, iii. 14, p. 334, *ff.*) says of the Σκλαβηνοί (Slavs), that they dwelt in miserable huts far removed from each other, and severally changed their dwellings very frequently, it becomes impossible to doubt that the Indo-European peoples, when they made their first appearance in history, were still possessed with nomadic tendencies.

At the same time, however, the passages quoted above clearly show that the Indo-Europeans must have been acquainted with the rudiments of agriculture, even in prehistoric times, since they appear equipped with them when they emerge from the mists of prehistoric antiquity. At any rate, Pytheas (*cf.* Strabo, c. 201*) in his journey to the North Sea—that is about 300 B.C.—found domesticated animals, and a mode, though an extremely primitive mode, of agriculture amongst the tribes of the north. Indeed the Æstyi, the ancestors of the Lithuanians, though they continued in almost entire ignorance of metals, pursued even in the time of Tacitus (*German.*, c. 45) a diligent agriculture; and the strategic writer Mauricius (*a.* 582–602; Müllenhoff, ii. 35) can say of the Slavs (Σκλάβοι) that they were rich in cattle of various kinds and in agricultural produce, stored in houses, especially millet. The Celtic Britons make only an apparent exception. It is only of the inhabitants of the interior that Cæsar says (v. c. 14): *Interiores plerique frumenta non serunt.* That on the coast, however, agriculture was well known is clearly shown by several passages in the *B. G.* (iv. c. 31, 2, c. 32, 1). If now we put the evidence of language by the side of these historical data, we find—to anticipate in a brief form the result of our investigations—an extremely limited amount of agreement between the European and the Asiatic branches of the Indo-European family in agricultural terminology, a considerable and significant agreement of the European languages amongst themselves; and even amongst the Indo-Iranians there are forthcoming some important, if not numerous, instances of agreement in this matter.

To the first-named class belongs the frequently mentioned Sans. *yáva*, Zend *yava* (Pers. *ǵaw*, "barley," Osset. *yew*, *yau*, "millet," Pamir D. *yumǧ*, &c., "meal;" Tomaschek, p. 63), G. ζεά, Lith. *jawaĭ*, "grain," and according to Stokes (*Irish Glosses*, p. 779) also Irish *córna*. The original meaning of this stock of words, however, can scarcely be ascertained, as the meaning has not been finally established in the Veda (grain, barley) and Homer—ζεά, with ὄλυρα, serves as fodder for horses. Here must be mentioned Lat. *pinso*, G. πτίσσω, Sans. *pish*, "grind to pieces," which has, indeed, in itself no value for inferences as to the primeval period, but is

* τὸ τῶν καρπῶν εἶναι τν ἡμέρων καὶ ζῴων τῶν μὲν ἀφορίαν παντελῆ τῶν δὲ σπάνιν, κέγχρῳ δὲ καὶ ἀγρίοις λαχάνοις καὶ καρποῖς καὶ ῥίζαις τρέφεσθαι· παρ' οἷς δὲ σῖτος καὶ μέλι γίγνεται, καὶ τὸ πόμα ἐντεῦθεν ἔχειν· τὸν δὲ σῖτον, ἐπειδὴ τοὺς ἡλίους οὐκ ἔχουσι καθαρούς, ἐν οἴκοις μεγάλοις κόπτουσι συγκομισθέντων δεῦρο τῶν σταχύων· αἱ γὰρ ἅλως ἄχρηστοι γίνονται διὰ τὸ ἀνήλιον καὶ τοὺς ὄμβρους.

connected in many Indo-European languages with the preparation of grain: O.S. *pisno*, "meal," O.N. *fis*, "chaff" (Curtius, *Grundzüge*, p. 498), Zend *pishtra*, "stamping out the grain," Mod. Pers. *pist*, "farina tosta tritica," Pamir D. *pōst*, *pist* (Tomaschek, p. 62). Further, we should perhaps here consider the following equations, the geographical distribution of which however is narrow (*cf.* above, pp. 178, 183): Lith. *dúna*, "bread" = Sans. *dhānās*, "grains of corn," Zend *dāna* (Mod. Pers. *dānah*, Pamir D. *pinǵ-dāna*, "five-corn," "millet"), G. τέλσον, "furrow" = Sans. *karshū*, Zend *karsha*, G. Lac. εὐλάκα = Sans. *vṛka*, "plough," and G. λαῖον, O.N. *lē* = Sans. *lavi* (*lavaka*, *lavāṇuka*), "sickle." The comparison of G. ἄρουρα with Sans. *urvárā* and Zend *urvara*, "field of crops" (Geiger, *Ostiran. Cultur*, p. 150), frequently asserted and employed for conclusions as to the history of culture, must be regarded as dubious (G. Meyer, *Gr. Gr.*², p. 91).

In contrast to these instances of linguistic agreement between Asia and Europe we now give those groups of equations which exist in the languages alike of South and North Europe. They are:—

Cultivated Land: G. ἀγρός, Lat. *ager*, Goth. *akrs* (*cf.* Sans. *ájra*, "pasture").

To Plough: G. ἀρόω, Lat. *arare*, I. *airim*, O.S. *orati*, Lith. *árti*.

The Plough: G. ἄροτρον, Armen. *arōr*, Lat. *aratrum*, I. *arathar*, O.N. *arār*; O.S. *oralo*, Lith. *árklas*, O.N. *arl*.

Harrow, to harrow: G. (Hesych.) ὀξίνη, Lat. *occa*, *occare*, O.H.G. *egjan*, *egida*, Lith. *akėti*, *akėczios*, O. Corn. *ocet*.

Sow: Lat. *sero*, Cymr. *hen*, I. *síl*, "seed," Goth. *sáian*, O.S. *sěja*, Lith. *sěti*.

Seed: Lat. *semen*, O.H.G. *samo*, O.S. *sěmę*, O. Pr. *semen*, Lith. *sėmū*.

Mow: G. ἀμάω, O.H.G. *májan*, G. ἀ-μη-τός, "harvest" = O.H.G. *mád*.

Sickle: G. ἅρπη (Lat. *sarpere*), O.S. *srŭpŭ*.

Mill: G. μύλη, ἀλέω (root *ml*), Lat. *molere*, I. *melim*, Goth *malun*, O.S. *melja*, Lith. *málti*, Alb. *miel*, "meal" (*cf.* Armen. *mal-em*, Sans. *mar*, "grind to pieces" (?).

Furrow: Lat. *porca*, O.H.G. *furuh*, O. Bret. *rec* (Armen. *herk* (?), G. πρασιή (?); *cf.* below, p. 289).

Bed: Lat. *lira*, Lith. *lýsė*, O.S. *lěcha* (M.H.G. *leis*, "track").

Ear (chaff): Lat. *acus*, *agna*, G. ἄχνη, Goth. *ahs*, *ahana*.

To these there is next to be added the not inconsiderable number of joint names for cereals and other fruits of the earth, which we shall consider subsequently; and of which we will here produce only those sets that are above all suspicion of late borrowing and are phonetically certain. They are:—

1. Lat. *grānum*, Goth. *kaúrn*, O.S. *zrŭno* (*cf.* Afgh. *zarai*, *zarai*, *K. Z.*, xxiii. 23).

2. Lat. *hordeum*, O.H.G. *gersta* (*cf.* Armen. *gari*, Pehl. *jurtak*, "grain, corn;" Hübschmann, *A. S.*, p. 24).

3. G. πυρός, O.S. *pyro*, Lith. *purai*.
4. Lat. *far*, Goth. *bar-iz-*, O.S. *bŭrŭ*, Alb. *bar*.
5. G. μελίνη, Lat. *milium*, Lith. *malnós*.
6. G. μήκων, O.H.G. *mago*, O.S. *makŭ*.
7. Lat. *faba*, O.S. *bobŭ*, Alb. *babe*.
8. G. κρόμυον, Lith. *kermuszis*, I. *crem*, Mod. H.G. *rams*.

To establish the historic, and above all the prehistoric, meanings of these terms is a business which will occupy us hereafter. For the present we have here in the third place to give the few instances of agreement in agricultural terminology between the Indo-Iranian languages. They are :—

Sans. *sasyá* = Zend *hahya*, "seed-corn," (*cf.* Armen. *haz*, "bread;" Fortunatow, *B. B.*, vii. 88).

Sans. *karsh* (*krshtáyas*, "cultivators" = men) = Zend *karesh*, "to plough" (*cf.* G. τέλσον).

Sans. *urvárâ*, "corn-field" = Zend *urvara* (*cf.* W. Geiger, *Ostiran. Cultur*, p. 150, and above, p. 283).

Sans. *dâtrâ* = Mod. Pers. *dâs*, "sickle."

Sans. *gôdhûma* = Mod. Pers. *gandum*, Pamir D. *ghidim*, "wheat" (Tomaschek, *Centralasiat. St.*, ii. 62; *cf.* γανδόμην ἄλευρα, Hesych.).

Sans. *mâsha*, "bean" = Mod. Pers. *mâš*, Pamir D. *maχ* (Tomaschek, *Centralasiat. St.*, ii. 62).

Sans. *bhanghá* = Zend *bañha* (see below).

According to Tomaschek (*loc. cit.*, p. 70) and Spiegel (*Arische Periode*, p. 70), Sans. *phâla*, "plough" = Mod. Pers. *supar*, Sanglîči *spur*, &c., belong here, which, however, is not possible.

Proceeding now to draw historical inferences from these linguistic data, we may, when we contrast the abundance of terms connected with cattle-breeding which are common to Europe and to Asia with the prevailing poverty of joint agricultural expressions, infer this much with certainty, that farming, in the most ancient prehistoric epoch that philology can take us back to, must have played a very secondary part to cattle-breeding in the national economy of the Indo-Europeans. Indeed, the equations given above (Sans. *yáva*, &c., and Sans. *pish*, &c.) are perhaps reconcilable with the view expressed by V. Hehn, that we are to conceive *yáva* as nothing more than a wild variety of cereal, the grains of which were trodden out and eaten.

I hold, however, decidedly to the opinion of those scholars (*cf.* above, p. 55) who see in the numerous agricultural terms common to the European languages a proof that the Indo-Germanic occupants of Europe must still have been closely connected together when they made important advances in agriculture. There is, as we have already seen, nothing in this inconsistent with the assumption that when words already existing were gradually becoming specialised and limited to the definite meanings of ploughing, sowing, &c., and were spreading from tribe to tribe, and coming to cover now a wider, now a narrower, geographical area, the peoples referred

to may already have been differentiated as regards dialect and ethnology, even though their area of distribution, when compared with that covered by them in historic times, was relatively narrow.

The question now presents itself—What have we to regard as the cause and what the nature of the joint transition of so large a portion of the Indo-Europeans from pastoral to agricultural life, however primitive? To begin with, there is nothing to warrant the assumption that, say, the neighbourhood of a more highly civilised people, or contact, whether in peace or war, with such a people, was the cause of this advance in national economy. At any rate, language has everywhere drawn on its own native resources for the designation of the new found art. Ἀγρός, in European languages "arable land," means in the Sans. *ájra*, "pasture," in the Zend *azra*, a waste stretch of land; the root *mel*, used in European to designate the grinding of corn, has in the Sans. *mar* still the meaning of grinding in general; Goth. *saian* and its stock only prevails in the sense of sowing in parts of Europe, for the G. ἵημι (*si-sē-mi) has still retained the original sense of throwing (the seed; *cf.* Sans. *vap*, "strew, sow"). Further, it is impossible to suggest any primitive people that can be regarded as the teacher of the Indo-Europeans. We must then, it seems, look for some [illegible] deep seated explanation.

In the matter of agriculture, if of anything, man is the child of the soil that bears him; and it is obvious that the inhabitant of grassy steppes is much later in learning to entrust the seed-corn to the earth than is the occupant of rich soil. We may, therefore, venture to conjecture that the gradual expansion of the Indo-Europeans brought the European peoples to a portion of the earth more fruitful than the point they started from. At an early period the original people may have fallen into two divisions—one, pure nomads to all intents and purposes, the other devoted to cattle-breeding and agriculture, even though a nomad mode of life still survived amongst them—just as in antiquity, the Scyths were divided into Σκύθαι ἀροτῆρες (or γεωργοί), occupying the fertile districts of the west, and Σκύθαι νομάδες (or βασίλειοι), spreading over the eastern steppes; or as the Turko-Tatars have from of old consisted of two main divisions, the *köček* and *čomru*, *i.e.*, wandering and settled nomads, of whom the former devote themselves exclusively to cattle-breeding, while the latter early applied themselves to the cultivation of certain productive districts on the banks of rivers (Vámbéry, *Primitive Cultur*, p. 103).

But the transition from pastoral to agricultural life cannot be explained solely, or even mainly, by a difference of soil. In this respect the observations made by D. Mackenzie Wallace in his book *Russia* (ii. 44, *ff.*) on the economic condition of the Bashkirs are highly instructive: "They are at present passing from pastoral to agricultural life; and it is not a little interesting to note the causes which induce them to make this change, and the way in which it is made. Philosophers have long held a theory of social development, according to which men were at first hunters, then

shepherds, and lastly agriculturists. How far this theory is in accordance with reality we need not for the present inquire, but we may examine an important part of it, and ask ourselves the question—Why did pastoral tribes adopt agriculture? The common explanation is that they changed their mode of life in consequence of some ill-defined, fortuitous circumstance. A great legislator arose amongst them and taught them to till the soil, or they came in contact with an agricultural race and adopted the customs of their neighbours. Such explanations may content those theorists who habitually draw their facts from their own internal consciousness, but they must appear eminently unsatisfactory to any one who has lived with a pastoral people. Pastoral life is so incomparably more agreeable than the hard lot of the agriculturist, and so much more in accordance with the natural indolence of human nature, that no great legislator, though he had the wisdom of Solomon and the eloquence of Demosthenes, could possibly induce his fellow-countrymen to pass voluntarily from the one to the other. Of all the ordinary means of gaining a livelihood—with the exception perhaps of mining—agriculture is the most laborious, and is never voluntarily adopted by men who have not been accustomed to it from their childhood. The life of a pastoral race, on the contrary, is an almost unbroken holiday, and I can imagine nothing except the prospect of starvation which could induce men who live by their flocks and herds to make the transition to agricultural life. The prospect of starvation is, in fact, the cause of the transition—probably in all cases, and certainly in the case of the Bashkirs. So long as they had abundance of pasturage they never thought of tilling the soil. Their flocks and herds supplied them with all that they required, and enabled them to lead a tranquilly indolent existence. . . . . With diminution of the pasturage came diminution of the live-stock, their sole means of subsistence. . . In spite of their passively conservative existence they had to look about for some new means of obtaining food and clothing—some new mode of life requiring less extensive territorial possessions."

A. Meitzen expresses himself exactly in the same sense in his paper, *Das Nomadenthum der Germanen und ihrer Nachbarn in West Europa* (*Verhandlungen des zweiten deutschen Geographentags zu Halle*, Berlin, 1882, p. 74).

Applying the teaching of these facts to the condition of the Indo-Europeans of the most ancient period, we find it probable that the gradual spread of the original people must have brought the European branch to a country which imposed considerable restrictions on free and unimpeded pasturage. Now, in the previous chapter, we have seen that the European languages are characterised by the fact that in them names, etymologically identical, for forest-trees (and also for birds) first appear in large numbers, quite as much as by their agreement in agricultural terminology. What now if these two facts are not merely coincident but causally connected? What, if language mirrors the migration of the Indo-Europeans from treeless endless steppes, where the solitary herdsman

pastures his flock, into a land fertile indeed, but confronting the nomad hordes with dense primeval forests, narrowing their pasturage down to the banks of lakes and streams, and—as the tribe increased and multiplied in spite of need and sickness—forcing the impatient nomad to take in hand, at any rate, for the space of a temporary settlement, the plough which the man and master by preference left to women, children, grey-beards (*Germ.* 25), and slaves!

Thus we have the following parallels:—

Steppe and Forest-Country.
Pasture and Agriculture.
Indo-Europeans and Europeans.

How this hypothesis accords with the geographical data that we have to consider in connection with the Indo-Europeans we shall see hereafter (ch. xiv.). I may, however, at once distinctly say that, as a matter of fact, in the state of things sketched above, I see an important clue to the question as to the origin of the primitive Indo-Europeans.

But we have to conceive of this prehistoric agriculture of the European branch of the Indo-Germanic family as being of the most primitive possible character. To the poet we may concede that Ceres steps into the blood-thirsty savages' midst, and with the first innocent offering of ears of corn bestows upon them all the gifts of a higher civilisation; in reality the links in the chain of development by which agriculture rises from the state of a piteous appendage of the business of pastoral life to a position of independent dignity are innumerable.

To begin with, the use of metals and metal instruments is by no means implied in assuming a primitive form of agriculture for the prehistoric Indo-European period. In New Zealand (*cf.* Th. Waitz und G. Gerland, *Anthropologie der Naturvölker*, vi. p. 61), "before planting, the soil was turned by means of pointed sticks, clods were broken by hand, roots and stones removed. Woodland was made arable by burning the wood, and the same plant was planted in the same place as long as it would thrive." C. H. Rau (*Archiv f. Anthrop.*, iv. 1, *ff.*) describes the Red Indians' stone agricultural implements.

The Indo-Germanic occupants of Europe were offered by the forest-country they entered plenty of material for their primitive agricultural implements. The Indo-Germanic plough was constructed in no other way than the most ancient Roman plough, nor perhaps than the old Greek ὄροτρον αὐτόγυον of Hesiod (*Works and Days*, 482), *i.e.*, it was a stout piece of wood bent into a hook shape, and beam and share-beam were all of a piece (*cf.* C. H. Rau, *Geschichte des Pfluges*, 1845, p. 14, *ff.*, and Baumeister, *Denkmäler*, s.v. *Ackerbau*). And, of course, there was nothing of the nature of a handle of any kind.

In out of the way corners of Europe this plough has survived into modern times.

Language, again, gives evidence as to the oldest make of plough;

in Gothic *hôha*, "plough," corresponds exactly to Sans. *çâkhâ*, Lith. *szaka*, "branch." To the same root, nasalised (Sans. *çanká*, "pole," O.S. *sakŭ*, "branch," G. κάγχανος, "dry," used of wood), the Mod. I. *céachta*, "plough" (**cēct-* from *cenct-*), seems to me to belong.

The senses of the O.S. *socha*.* (Miklosich, *Et. W.*) come under the head of "stick, used for cutting open the ground;" for just as O.H.G. *seh*, "plough," is connected with *sâge* and *sichel*: Lat. *secare*, so I connect O.S. *socha*: Sans. *ças*, "cut," *çásá*, "cutting," *çásd*, "cutting edge, dagger." The σπινδῆρα · ἄροτρον of Hesychius may belong to Sans. *spandaná*, "tree," Wakhi *spundr* (Tomaschek, *C. St.*, ii. 71). Sans. (Vedic) *lā́ñgala*, "plough," is obscure to me (*cf.* Sans. *lagula*, "stick" ?!).

G. γύης (γύα, "arable land") is etymologically the bent wood or "crook" which the farmer in Hesiod was himself to look for on hill and dale (φέρειν δὲ γύην, ὅτ' ἂν εὕρης, εἰς οἶκον, κατ' ὄρος διζήμενος ἢ κατ' ἄρουραν, πρίνινον, W. and D. 425; *cf.* also Rau, *loc. cit.*, p. 25). It belongs to γῡ-ρό-ς, "bent," and its root is perhaps the same as that of Lat. *bū-ra*, "crook," which in that case must, on account of its *b*, have been originally an Oscan farmer's word (*cf.* *bōs*: Sans. *gáu*). As γύης is related to γῡ-ρό-ς, "bent," so is ἔλῡμα, "share-beam" (originally however, of course, share-beam + crook): ἐλύω, "bend, twist;" unless, perhaps, ἔ-λῡ-μα is primevally connected with Lith. *lè-mŭ*, gen. *le-men-s* "tree," and only assimilated to ἐλύω in the matter of its vowel.

The ancient Indo-Germanic plough then was nothing more originally than a bent, wooden branch; which, however, may at an early time have had a sharp stone, instead of iron, affixed to the end turned to the soil. This arrangement may date from primeval times. At any rate, there are two European equations, not indeed absolutely certain, which specially designate the plough-share. One is G. ὕννις, ὕνις = Lat. *vômer*, *vômis* (**us-ni*: **ves-mi*; Fick, *K. Z.*, xxii. 156), the other G. ὀφ-νί-ς · ὕννη, ἄροτρον, Hesych. = O.H.G. *wag-an-so*, *waginso*, M.H.G. *wagense* (**vogh-n-*; Bugge, *B. B.*, iii. 121, disagrees). In German this part of the plough is called *seh* (see above) and *scaro*: O.H.G. *scëran*, in Slav. *lemeší*: *lomiti*, "break."

It is further to be noted, as indeed J. Grimm observed (*Geschichte d. D. Spr.*, p. 56), that the plough or certain parts of it are often named after various animals. Thus Sans. *vṛ́ka* means the wolf with its biting teeth and also the plough (G. εὐλάκα); in O.H.G. *geiza* (*cf.* Lat. *hædus*) is used of the plough-stilt, which is fixed like a horn to the crook or the share-beam (*cf.* Hesych., αἴγ-λας · τὰ περὶ τὴν ὕννιν τοῦ ἀρότρου : αἴξ); but the rooting hog seems to have figured especially in these rustic metaphors. Thus in Old Irish *socc* (F. *soc*) = Cymr. *swch*, Corn. *soch*, Bret. *souch*, *soch*, is the plough-share (**succos*), but also means "pig's snout," which must be regarded as the older meaning; *cf.* Cymr. *hwch*, Corn. *hoch*, Bret. *houch*, *hoch*, "hog" (Thurneysen, *Kelto-Romanishes*, p. 112). Even still in

* V. Hehn erroneously compares *socha* with Goth. *hôha*, and connects O.H.G. *seh* (incorrectly written *séh*) with F. *soc*, &c., see below.

Germany, according to J. Grimm, the light plough in some districts is called "*Sauweinsnase*," and amongst us *pig's nose*.

This being so, it is probable that the European term for the pig (quoted above, p. 261), Lat. *porcus*, Lith. *paršas*, O.S. *prase*, O.I. *orc*, O.H.G. *farah* (**porko*) is identical with Lat. *porca*, "ridge," O.H.G. *furah*, "furrow," O.I. *rech*, &c. (**prko*). **Prko* (*porko*), then, probably originally meant "plough," then the furrow made by the plough (*cf.* A.S. *suth*, "plough"; Lat. *sulcus*, "furrow," Goth. *hôha*, "plough"; O.H.G. *huohili*, "furrow," G. γύης, "plough"; γύη, "arable-land," G. αὐλάγα· ὄγνις, Hesych.; αὖλαξ, "furrow," &c.); so that the development of meaning was pig (farrow), plough, furrow. Armen. *herk*, "fresh-ploughed fallow-land," would be difficult because of its *k* = *q*.

Complete obscurity, unfortunately, covers the origin of the Slavo-Teutonic word: O.H.G. *phluog*, O.N. *plógr*, Russ. *plugŭ*, Pol. *pług*, Lith. *plúgas* (from Lesser Russian *pluh*). The term also recurs in Wallachian (*plug*) and in Rhæto-Romance (Lob. *pio*, Tir. *plof*). L. Diefenbach (*O. E.*, p. 399) and, following him, V. Hehn refer to Pliny, *Hist. Nat.*, xviii. 18, 48, where the subject is the discovery of the wheel-plough (F. *charrue*): "Vomerum plura genera . . . . non pridem inventum in Rætia Galliæ, ut duas addierent tali rotulas, quod genus vocant plaumorati" (Mid. Lat. *ploum*, *plovum*); but this does not give anything like a clear etymological connection. G. Baist (*Wölfflin's Archiv*, iii. 285) proposes to read the last sentence of the passage quoted above, thus: "Quod genus vocant ploum Bæti."

It must have been a work of unutterable difficulty to prepare the forest soil of ancient Europe, matted as it was with roots, to receive the grain of Ceres, with the primitive implements of the primeval age—a work which, on the whole, could not have been executed by individuals, but only by the sib community.

As a consequence, the arable-land gained by the joint-labour of the sib remained in its possession, even when the settlements had become permanent. As to the Teutons we have Cæsar's statements with respect to this (*B. G.*, vi. 22): "Neque quisquam agri modum certum aut fines habet proprios: sed magistratus ac principes in annos singulos gentibus cognationibusque hominum qui tum una coierunt, quantum et quo loco visum est, agri attribuunt atque anno post alio transire cogunt"; and (iv. 1) as to the Suebi: "Sed privati ac separati agri apud eos nihil est neque longius anno remanere uno in loco incolendi causa licet." It follows from these words that in Cæsar's time amongst the Teutons private property in land was unknown, that the soil was rather the property of the various communities, into which the *civitas* was divided. The magistrates annually assigned the use of certain land to the individual sib communities. The land-marks, and with them the dwellings, were changed every year. The cultivation of the soil, within the *gentes ac cognationes*, was done in common (from Brunner, *Deutsche Rechtsgeschichte*, i. 69, Leipzig, 1887).

In Tacitus (*Germ.*, c. 26: "Agri pro numero cultorum ab uni-

versis in vices occupantur, quos mox inter se secundum dignationem partiuntur, facilitatem partiendi augent, quod proveniunt: arva per annos mutant, superest ager. Unde manet in vicis the joint cultivation of the soil to its private [illegible] by the various House-Fathers has already been effected. The redistribution of the plough-land now takes place anew among the villagers, viz., amongst the members of the mark. The arable land is now distributed, probably by the periodical drawing of lots, amongst the householders . . . . . If the soil, in consequence of the ignorance of manure, was exhausted in a short time, the land after harvest was allowed to remain as wild pasture land, and another portion of the mark was measured and allotted out as arable land (Brunner, *loc. cit.*, p. 61).

In Russia, as amongst the rest of the Slavs, the system of communal ownership has, as is well known, survived in many districts to modern times. The land belongs to the village community, and is periodically allotted to individuals to use for a longer or shorter time (from one to twenty years); *cf.* M. Kulischer, *Zeitschrift für Völkerpsych. u. Sprachw.*, x. 370.

Precisely the same system can be shown to have existed in ancient Ireland from the Brehon laws (*cf.* Maine, *Lectures on the Early History of Institutions*[1]; ch. iv., The Tribe and the Land).

Finally, I am inclined to regard the ancient distribution of land in Sparta, which bears the name of Lycurgus, as nothing but a similar allotment of the arable land gained by conquest. At any rate, after this distribution the soil still continued to be the property of the community, the state; and the *klēroi* assigned by the state to the non-nobles at least were inalienable, and reverted to the community when a family died out (*cf.* G. Gilbert, *Handbuch der griech. Staatsaltertümer*, i. 10, *ff.*, Leipzig, 1881).

In ancient Rome, too, the conception of ownership must, according to Th. Mommsen's account (*Röm. Staatsrecht*, iii. i. 21, *ff.*), have manifested itself solely in movable property (*familia, pecunia*), while the soil was originally the common property of the tribe.

Under these circumstances we have no difficulty in understanding that the primitive terms for property, wealth, riches, &c. (cf. *Handelsgeschichte und Warenkunde*, i. 5), include nothing like the Lat. *possessio* or the German *besitz*, which refer to "real" property. Nor is there any primeval expression for "inheritance," "inherit," which, again, must have applied to movables. The words used by the individual languages to express this idea frequently start from the sense of "orphan," "orphaned." Thus, Goth. *arbi*, "inheritance," L. *orbo*, "hereditas" (where note the parallelism of meaning in these two neighbouring languages; *cf.* above, p. 125), belong to Lat. *orbus*, G. ὀρφανός; and the Lat. *hērēs*, "heir," obviously cannot be dissociated from G. χῆρος (with Common Greek ē; *cf.* Crēt. χηρέουσα, Gortyna Code), "orphaned, widowed, bereaved" (Sans. *ja-hi-nu*, "bereaved").*

* This comparison, which is derived, indeed from Bopp, seems to me better both as regards meaning and sound than the comparison of Lat. *hērēd-* with

Private property in land amongst the Teutons and Slavs started with the farmyard, which we may picture to ourselves even in primitive times as surrounded by a fence of twisted thorns and reeds. This space, cut off from the common land or the general pasturage, is probably what was originally indicated by the European equations: Lat. *hortus*, *cohors*, Osc. *hurtúm*, G. χόρτος, "grass, hay, fodder, farmyard," O.I. *gort*, "seges," *lub-gort*, "vegetable-garden," Lith. *žardis*, "horseyard," Goth. *gards*, Germ. *garten*, and G. κῆπος (κᾶπος) = O.H.G. *huoba*. So long, however, as settlements were but temporary, the conception of property, strictly speaking, could not be developed. Subsequently the expression *hufe* in German comprised all rights which the individual members of the village or farming community possessed in regard to the soil (Brunner, *loc. cit.*, p. 62). In Greece all permanent occupation, and therefore also personal property, in land goes back to the garden (κῆπος) and the cultivation of the trees therein. In the terminology of the Twelve Tables, *heredium*, "inheritance," means merely the garden (not the arable land) which belongs to a farmhouse (*hortus*); Mommsen, *loc. cit.*, p. 23.

We shall return subsequently (ch. xii.) to the relation of the Indo-Europeans and their tribes and communities to the soil which they cultivated and on which they dwelt.

As, however, it is indubitable, after what has been said, that the Indo-Germanic occupants of Europe practised agriculture at a time when they were ethnically united, we have the right to further enquire how great or how small was the knowledge of cultivated plants which the European members of the Indo-Germanic family brought with them into the period of historic tradition. Such an investigation, however, is unfortunately beset with great difficulties.

For one thing, within the limits of a single equation there is an extraordinary variation of meaning. Thus, G. πυρός (Syrac. σπυρός) and Lith. *purai* means wheat, whereas the Slav. *pyro* means in the various dialects *far*, *milium*, *spelt*, *triticum repens*, *quick-grass* (Miklosich, *Et. W.*). Now, V. Hehn in all such cases starts from the wild varieties, in this case the quick-grass, as being the species to which the term was originally applied. But granted even that this view is correct—for there is nothing impossible either as regards fact or language in the change being from the cultivated to the wild variety—the agreement of Greek, Lithuanian, and Slavonic in meaning "wheat" as opposed to "quick-grass" remains just as important as, say, the agreement of Lat. *sero*, Goth. *saian*, Lith. *sëti* in the meaning "to sow" as against G. ἵημι, "throw." For the rest, the *triticum repens* is called quick-grass in some German dialects (*cf.* Grassmann, *Pflanzennamen*, p. 253).

To these difficulties which reside in the varying meanings of the words must be added one that is particularly great in this

G. χείρ, O. Lat. *hir*, "hand" (cf. *mancipium* from *manu capere*), which Curtius first brought out, and for which Leist (*Civilist. Stud.*, iv. 91) has endeavoured to provide further support.

instance—that of distinguishing sharply between what was early borrowed and what is primevally related. Finally, we have no satisfactory information as to the real meaning of a whole string of cultivated plants—I may quote from Greek alone, ζεά, ὄλυρα, τίφη.

For all these reasons it is very precarious work making definite statements about the capital possessed in this line by the primitive age; and we are anxious to insist emphatically on this point at the very beginning of this section.

To begin with, I feel no hesitation in ascribing barley and wheat to prehistoric European culture. For the former I find two equations, Lat. *hordeum* = O.H.G. *gersta*, and Alb. *el'-p-li* = G. ἄλφι (ἄλφιτον). I cannot venture to compare G. κρι-θή with Lat. *hordeum* in spite of Thurneysen (*K. Z.*, xxx. 352). It is an expansion of the simple Homeric κρῖ, which occurs in another expanded form, **kri-go*, in κρίβ-ανος, "barley-cake," "oven for roasting barley," and in κρίμνον (from *κριβ-νο-ν), "barley." Barley all over Indo-Germanic territory—in Homer, ancient Italy, amongst the Scandinavians (*cf.* Weinhold, *Altn. Leben*, p. 78)—appears as a cultivated plant of extreme antiquity, closely connected with the holy ritual of sacrifice, as Pliny (*Hist. Nat.*, xviii. 7. 14) expressly says: "Antiquissimum in cibis hordeum." Amongst its other names, the Lith. *miẽžiei*, O. Pr. *moasis*, and the O.S. *jęčĭmy* (root *jenk*)* remain obscure to me.

The names for wheat have already been mentioned. In the north of Europe, Goth. *hvaiteis* seems to be represented by Lith. *kwiec-žieĩ*. If this connection is really one dating from primeval times, *hvaiteis* could not have anything to do with Goth. *hveits*, "white" (*cf.*, however, Bret. *gwiniz*, "wheat": *gwenn*, "white"), which recurs in Lithuanian *szwiečziąs* = Sans. *çvêtá*, "bright." An equation confined to the south seems to be Lat. *simila*, *similâgo* = G. ἱμαλιά· τὸ ἐπίμετρον τῶν ἀλεύρων, ἱμαλίς· ἡ ἐπιμύλιος ὠδή, Hesych. In Europe wheat is scarcely inferior in antiquity to barley, though it was hardly cultivated in the most ancient times in Italy as extensively as the other cereals (*cf.* Helbig, *Die Italiker in der Poebne*, p. 65). Its cultivation flourished in Homeric times, where it is called μελιηδής, μελίφρων. Its meal, from which bread (πύρ-νο-ν) is baked, is the meal κατ' ἐξοχήν: ἀλείατα, ἄλευρον: ἀλέω, root *mel*, *ml* (Armen. *aleur*, *aliür*, "meal," loan-word (?); *cf.* Hübschmann, *A. St.*, i. 17). In the same way the Lat. *trîticum*, perhaps also O.I. *tuirend*, belongs to *tero*, *trîto-*, "rub to pieces." Barley and wheat were used to make beer even in ancient Germany (Tac., *Germ.*, 23).

Another equation, running from north to south, is Lat. *far* (Umbr. *far*, *farer*, Osc. *far*, Umbr. *farsio*, *fasio*), "spelt"—on ancient Italian ground by far the most important of cereals, especially for sacrifices—Goth. *bariz-*, O.N. *barr*, "barley" (I. *bairgen*, "bread"?), O.S. *bŭrŭ*, "milii genus," Alb. *bar*, "grass," a series, the original meaning of which it can hardly be possible to recover. Germ.

* Perhaps related in root to G. ἀκ-οστή, "barley" (root *euk*?).

spelz, Dutch *spelt* (**spel-do*) recurs, as I believe, in Lat. *pollēn* (from **spl-l-ēn*; cf. *sallere* from **sal-dere*), "fine meal." The root-forms *spel* and *pel* (*pol-enta*, *puls*, *palea*,* πόλτος) are also seen in G. πα-σπάλ-η and παι-πάλ-η, "finest meal." Thus Lat. *pollēn* : Dutch *spelt* :: G. ἀθάρη, "wheat-meal broth" : Lat. *ador* "spelt," unless the latter belongs to Goth. *atisk* (above, p. 128).

Millet must have attained to very considerable importance at an early period. This is indicated not only by the records of history (*cf.* above, p. 282, *f.*), but also by the names of this grass-plant. G. μελίνη, Lat. *milium*, Lith. *malnós* is the "meal-plant" (root *mel*, G. ἀλέω, Lat. *molo*, Lith. *málti*); Lith. *só-ra*, *sóros* (: *sē-ti*; *cf.* Goth. *sai-sô* : *saian*, G. ἀφίημι : ἀφέωκα) is the "seed-plant;" G. ἔλυμος : ἔλυμα, "plough-share," is the "plough-plant;" Lat. *pā-nicum* : *pasci*, *pā-nis* is the "feeding-plant."† G. κέγχρος alone (which seems to be related by "gradation" to κάχρυς, "barley"), and Slav. *proso* (= A.S. *fyrs*, "lolium"?), I find obscure.

We have then ascribed barley, wheat, and millet in the way of grain to prehistoric European agriculture, but it is probable that the acquaintance of rye was made at a time posterior to the wider geographical expansion of the northern European tribes, to whose languages the equation : O.H.G. *rocko*, O.N. *rūgr*, A.S. *ryge*, Lith. *rugys*, O.S. *rūžĭ* is confined. The origin of this stock of words (**rughi-*) is obscure : a connection with Sans. *vrîhí*, "rice," and Thracian βρίζα (Hehn) is hardly conceivable. In the south of Europe this grass-plant was not originally cultivated. When it became known it was called *sec-ale*, "sickle-plant."

The cultivation of oats belongs to a much later period : to the South Europeans they were only known as a weed. As such they were probably designated from the beginning by the equation : O.S. *ovĭsŭ*, Lith. *ãwižos*, Lat. *avēna*. Numerous names, such as G. αἰγίλωψ, βρόμος, &c., as J. Grimm indeed remarked, designate oats as sheep-weed or goat-weed ; according to V. Hehn the *tertium comparationis* is the sterility of the goat and of oats, while according to J. Grimm the animals mentioned particularly attack oats. The equation given above, O.S. *ovĭsŭ*, probably belongs to this category, and perhaps may be combined with O.S. *ovĭca*, Lith. *awis*, Lat. *ovis*; but hardly O.H.G. *habaro*, which cannot be connected with O.N. *hafr* (G. κάπρος "goat"), because Swed. *hagre* (Finn. *kakra*) points to a form containing a guttural (*cf.* Kluge, *Et. W.*). Subsequently oats became a favourite food in the north, especially among the Teutons.

Flax I regard as having been cultivated in the primeval period : G. λίνον, Lat. *līnum*, I. *lín*, Goth. *lein*, O.S. *lĭnŭ*, Lith. *lĭnas*. There is absolutely no reason for regarding this series as due to

* If *pal-ea*, "chaff," belongs here, it is obvious to connect O.H.G. *spriu*, Mod. G. *spreu*, with G. σπυρνός, "wheat" (*cf.* above) : root *spur* : *spru*, *sprew*.

† Can it be that O.H.G. *hirsi*, *hirso* (**ker-s*) have a similar fundamental meaning, and belong to G. κορέννυμι, "satiate" (**kor-ēs*)? Kluge (*Et. W.*) compares Lat. *cirrus*, "tuft :" Grassmann (*Pflanzennamen*) connects *hirso* : Sans. *krsh* ("plough-plant" therefore), which root, however, shows an *l* in European (*cf.* G. τέλσον). Others suggest Lat. *Ceres*. *Non liquet.*

borrowing.* The root (*cf.* Hom., λί-τ-ς, λι-τή) seems preserved in Sans. *lī-yā-tē*, "bend oneself," so that the flax stalk was naturally named after its tough and pliant filament, which is so well adapted for spinning. The connection of the stock of words mentioned from original times is supported by the primeval derivatives from *G. no-*: Lat. *linteum*, "linen," Lith. *lintà*, "ornamented band," O.N. *lunnr* (**lipdr*), "girdle," O.I. *leine* (nom. plur. *loniu*).

On the other hand, the agreement between the European words used to designate hemp: G. κάνναβις, Lat. *cannabis*, O.S. *konoplja*, O.N. *hampr*, A.S. *hænep*, O.H.G. *hanaf* is certainly due to borrowing. The Greek word occurs first in Herodotus, who (iv. 75) is acquainted with hemp both wild and cultivated (καὶ κάνναμίν τε καὶ σπαρτόν) in the country of the Scyths, whence, indeed, this otherwise obscure word may have its origin. The Romans, amongst whom hemp is mentioned for the first time about 100 B.C., naturally have to thank the Greeks for their *cannabis*.

The Teutonic word may have been borrowed from Lat. *cannabis*, and in that case must go back to a time before the First Sound-shifting, which is improbable both in itself (*cf.* above, p. 276), and because of the late date at which hemp became known in Italy. A more likely assumption, therefore, is that the Slavo-Teutonic expression, O.S. *konoplja*, O.H.G. *hanaf*, comes from the same source as the Greek κάνναβις, and must then have spread through both branches at a very early date. In no case could the European words mentioned be primevally related with Sans. *çaṇá*, "hemp," which would necessarily be represented by an O.S. **sonopŭ*.

A second Slavo-Teutonic expression, in which, however, the meanings of "flax" and "hemp" would be confused, is perhaps O.H.G. *flahs*, if it can be compared with O.S. *poskoni*, "hemp," which also occurs with *l* (Pol. *płoskoń*, Lith. *plonkanei*; Miklosich, *Et. W.*). Still the relation of Teut. *flah-s* : Slav. *plosk-* remains obscure.

Again, Russ. *penika*, Pol. *pienka*, compared with Iran. *banha*, "hemp" (Hehn), is unexplained, and very remarkable.

Especial difficulties are offered by the names of the leguminous plants. As regards peas,† in the first place, Lat. *ervum* and G.

* V. Hehn (*Kulturpflanzen*[5], p. 523, [6]p. 482) would like to refer G. λίνον to Dacian δίν, "nettle," which, however, involves unheard of phonetic changes in vowel and consonant alike. O.H.G. *linta*, "lime-tree," again is to be kept clear of *linteum*; *cf.* above, p. 274. Again, O.H.G. *flahs* has been compared with Lith. *plaukas*, "hair," even indeed with O.S. *vlasŭ*, O.N. *hár* with O.S. *κρόκη*, which are all phonetically impossible. Αἶθ. (Tusc.) *kerp*, but Gcg. *kaurp*, which Hehn compares with O.S. *kropiva*, is nothing but a loan-word from It. *canape*, "hemp" (G. Meyer, *Alb. Gr.*, § 12).

† V. Hehn (*Kulturpflanzen*[5], p. 178) assumes **vorvo* as the original form of ὄροβος; but first, the hiatus after ϝ (*Il.*, xiii. 588: ἢ ἐρεβινθοι) is no proof of an initial digamma; next, the Hesychian forms γέλινθος, γέρινθοι, which lack the characteristic β, must be excluded; and, thirdly, *r* in Greek cannot change into β. Further, as Hehn also assumes, *ervum* would have to be borrowed from ἐρέβινθοι, which is phonetically impossible. The *a* of *arwiz*, Hehn, following Wackernagel, conjectures to be an echo of the Goth. *ai* in the supposititious Goth. **arwailsi*.

ἐρέβινθος, ὄροβος, unite in a common fundamental form *ergo, *orgo. But what was the relation of these words to the Teutonic expressions, A.S. *earfe*, O.H.G. *arwîz*, *arawîz*, Mod. Germ. *erbse*? The difficulties in the way of assuming that these are loan-words from the south of Europe are known to every student of language. Kluge, therefore, feels compelled in his *Et. W.* to assume a common unknown source (as in the case of the names for "hemp") for A.S. *earfe*, O.H.G. *arwîz*, Lat. *ervum*, G. ἐρέβινθος. I do not regard this as necessary. I believe that by bringing in the G. ἀρακός, "leguminous plant," we can show the Teutonic words to be related at least in point of root with the South European words. Thus we get: *ér-go = Lat. *er(g)vum*, G. ἐρέβινθος, ὄροβος; *r̥-gó = G. ἀ-ρα-κός; *r̥-gó = O.H.G. *ar(g)wîz* (suffix obscure); and A.S. *earfe* (the *u*-timbre of the *r̥* vowel would explain the labialism).

Greek and Latin have still a second name for the pea which rather points to primeval relationship: Lat. *pîsum*, G. πίσσον, πίσος (*pins-o), which derives from the above-mentioned root πτίσσω, *pinso*, &c.

The pea was cultivated in Homer; its extreme antiquity in Italy is indicated by proper names such as *Piso* and *Cicero* (: *ci-cer* = G. κρ-ίο-ς).

In the names for the lentil primeval connection and borrowing seem to cross: Lat. *lens*, *lentis* (cf. *Lentulus*), is perhaps primevally connected with O.S. *lęsta* (*lent-ja); while O.H.G. *linsi* is rather borrowed from the Latin. Lith. *leñszé* is obviously of German origin. O.S. *sočivo* is obscure. In Homer the lentil is not mentioned.

The same holds of the names for the bean: Lat. *faba* (*gens Fabiorum*), from which I. *seib* is borrowed, corresponds according to phonetic law with O.S. *bobŭ* (from which again come O. Pr. *baba*, Lith. *pupà*); and with Alb. *ba-θe* (θę diminutive according to G. Meyer). Germ. *bohne*, O.H.G. *bôna*, A.S. *beán*, O.N. *baun* appear to stand apart. Most probably they are primevally related with G. φακός "lentil" (Teut. fundamental form *bag-nâ). The meaning would then waver between "bean," and "lentil," much the same as in O.S. *grachŭ*, "bean," Mod. G. *grah*, "pea." The Greeks, who cultivated the bean even in Homeric times, formed a new word for it: κύαμος, πύανος : κυέω, "swell" (*cf.* Brugmann, *Gr. Gr.*, p. 20).

I conclude this account of the fruits of the field with a mention of the *liliaceæ* and bulbous plants.

Amongst the former I mention the onion: G. κρόμυον (as old as Homer), Lith. *kermùszé*, I. *crem*, N.H.D. *rams*. Further, Lat. *cepa*, *cæpe* (*gens Cæpionum*) may be compared with Arcad. κάπια (O. Weise, *Gr. W. im Lat.*, p. 126), and G. γελγίς by the side of βολβός (*gel-go) with Lat. *bulbus*; for the latter word is rather primevally related to the Greek than borrowed from it. This is confirmed by its employment as a proper name (*Bulbus*), and by the number of its derivatives: *bulbosus*, *bulbaceus*, &c. For Lat. *b* = *g*, *cf.* above, p. 417, on *bûra*.

For leek (garlic) I refer to G. σκόροδον = Alb. *hudęre*, G. πράσον

(O.S. *prasŭ*) = Lat. *porrum* (Osthoff, *M. V.*, ii. 50, disagrees), and to I. *luss* (**luk-s*), O.H.G. *louh*, Russ. *luku*, Lith. *lúkai*, which are obviously borrowed, perhaps from east to west.

As for the names of the rape: G. *ῥάφυς*, Lat. *rāpa*, O.H.G. *ruoba*, O.S. *rĕpa*. I fear we shall again not get beyond a *non liquet*. Against the primeval connection of these words there are first linguistic reasons, viz., that initial Greek *ῥ* does not seem to go back to an ancient initial *r* (G. Meyer, *Griech. Gr.*[2], p. 175), and also that the gradation (*Ablaut*) from *ĕ* : *ā* (O.S. *rĕpa* : Lat. *rāpa*), which must be assumed on the theory of primeval relationship, would be altogether unusual; next, as regards the history of culture, it is suspicious that, unlike the other cultivated plants which we have assigned to the primeval period, the rape does not seem to have been cultivated in ancient Greek (Homeric) days, but only appears at a relatively late period. Ῥάφυς, "rape," is preceded by a word formed from the same stem, *ῥαφανίς* (Aristoph.), "radish." On the other hand, the assumption of a loan from the South European to the North European languages is by no means satisfactory phonetically.

Summing up we find as the result of purely linguistic arguments that the names for barley, wheat, millet, flax, perhaps also for peas, beans, and onions, in all probability go back to the prehistoric European period. All these plants were already under cultivation in Homeric times and in ancient Italy, nor is there wanting express evidence that they were, at least partially, known in the north of Europe.

Another observation forces itself on our notice in this connection; the stock of cultivated plants which, as we believe, we have traced to the prehistoric European period, recurs in all essential points in the culture of the Semites and Egyptians, *i.e.*, those plants which we found to belong to the former period, such as barley, wheat, millet, flax, beans, onions, also recur among the latter peoples; while those which are absent in the one case, such as rye, oats, and hemp, are missing in the other also (*cf.* Franz Woenig, *Die Pflanzen im alten Ägypten*, 2 Aufl., Leipzig, 1886, and Riem, *Handwörterbuch des biblischen Altertums*, Bielefeld u. Leipzig, 1884; *cf.* also above, p. 43). Only, in the way of leguminous plants, amongst Semites and Egyptians alike, the lentil plays the principal part instead of peas, which, perhaps, were on the whole unknown. The rape is not mentioned in the Bible, and its occurrence in Egypt seems doubtful (*cf.* Woenig, *loc. cit.*, p. 216, *ff.*). The above-named cultivated plants therefore must at a very early time have obtained an extraordinarily wide distribution, which, however, became the more restricted the farther north it went: thus, according to Ahlqvist's investigations, the Finns cultivated barley and rape alone (*cf.* above, p. 45). What the centre was from which they were distributed is a point on which we await instruction from naturalists. Any one, however, who takes up De Candolle's book on the *Origin of Cultivated Plants*, in which our scientific knowledge on this point is put together, may easily see that we are here still plunged in a sea of doubts, and

Most Humboldt's dictum: "The origin, the earliest home of the plants most useful to man, his companions from the remotest ages, is as impenetrable a secret as the home of the domesticated animals," has not yet been refuted in the cases of those particular plants whose original home it would most interest us to know.

There remains therefore an extraordinary amount for future research to do, as regards both facts and language, in the matter of the most ancient cultivated plants.

Returning to the European members of the Indo-Germanic family, we regard it as probable that even when they had once applied themselves to a primitive, semi-nomad form of agriculture, which they only practised with any earnestness when a longish halt was forced upon them, they stuck at this stage of civilisation for many centuries. A new era dawns on the south when it comes in contact with the civilised world of the Orient, on the north when it encounters the civilisation of the Mediterranean peoples.

The last and surest step in permanent agriculture is the cultivation of trees, which, of course, was totally unknown to the European members of the Indo-Germanic family in their earliest period. As Thucydides expressly says of the most ancient Greeks, that they planted no trees (*οὐδὲ φυτεύοντες*), so Tacitus says of the Teutons (c. 26): "Necenim cum ubertate et amplitudine soli labore contendunt, ut pomaria conserant et prata separent et hortos rigent: sola terræ seges imperatur." On wild fruit-trees, see above, p. 275, *ff.* Habituation to more permanent habitations brought with it the gradual introduction of horticulture and kitchen gardens, which were unknown to the primitive age, although perhaps even in temporary settlements individual families may have just fenced off a piece of ground in the neighbourhood of the house on which to grow bulbs, beans, and peas. The names of kitchen and garden plants (words such as cole, cummin, cabbage, vetch, onion, radish, mint, asparagus, &c.) common to nearly the whole Slavo-Teutonic (and partially to the Celtic) north, bear the mark of their South European origin on the face of them. Frequently they cannot be traced further back than Italy or Greece; not unfrequently, however, they take us across Italy and Greece to the district whence come countless valuable gifts of civilisation—the Semitic and Syrian world. Thus, to quote only one example here, the names for cummin (Hebr. *kammon*, Arab. *kammûn*, G. *κύμινον*, Lat. *cuminum*, O.H.G. *chumin*, O. Russ. *kjuminŭ*) clearly indicate the route followed by civilisation from east to west in this case.

But all this is no part of our task. We shall be brought back once more to the subject of cultivated plants by the history of wine, which we reserve for chapter vii. (Food and Drink).

Having thus far concerned ourselves exclusively with the agriculture of the prehistoric European period, we must before closing this chapter dwell, if only for a few words, on the Indo-Iranians. We have already seen on p. 284 that special agreements exist between Sanskrit and Iranian in agricultural

terminology; and there is nothing to prevent us from assuming that these peoples, like the Europeans, effected their transition to agriculture, or at any rate made considerable advances in agriculture, on some suitable soil, the locality of which we shall subsequently endeavour to determine, at a time when they were yet ethnically united.

This early Indo-Iranian agriculture again must be regarded as primitive in kind and as not implying permanent settlement. In the Avesta itself, according to W. Geiger's investigations (*Ostiran. Kultur*, p. 399, *ff.*), we are confronted by two stages of culture amongst the Zend people. First the *Gâthas* present us with what was practically the economic life of the primeval Indo-Iranian period: agriculture is not absolutely unknown, but it is very secondary to cattle-breeding. The centre of the tribal economy is the cow. Irrigation of the soil—absolutely indispensable, under the peculiar conditions of the ground in Persia, if the soil is to be tilled even in a moderately effective manner—is not yet mentioned. The picture presented by the younger portions of the Avesta is quite different: in them the Iranian has become a settled agriculturist, who tills the soil in accordance with the godly precepts of Ahura Mazda. Irrigation is practised with technical skill. Even the cultivation of trees, which binds man more surely to his native soil, is known to the people of the Avesta.

The Indians, too, seem to have enjoyed, even in the age of the Rigveda, a more settled form of life than, say, the Greeks of whom Thucydides speaks (*cf.* above, p. 281), or the Teutons described by Cæsar, notwithstanding the fact that a gradual advance southwards and eastwards, in the face of the resistance of the natives, was still going on amongst the Indians. Here and there, as Ludwig remarks in the index to his translation of the Rigveda, p. 138, the text seems indeed to point to the existence of hostile relations between the later "Âryan" immigrants and the earlier ones who had already permanently settled down.

Unfortunately, as yet we know very little of the relation of the Vedic Indian to the soil he tilled. What is beyond doubt is that the economic life of this period was played in the community of villagers who were bound together by the bonds of kinsmanship. But, touching the relation of the individual to the land of the whole village, from the point of view of legal rights and property, nothing satisfactory is known to me. One passage (Rigv., i. 110. 5) clearly refers to measuring out fields (*kshetram iva vi mamus têjanêna*), and may refer to private property not to the property of the community.* In this connection we may

* We may expect further information as to the state of things in modern India in this respect from the *Ethnological Survey of India* (above, p. 112). *Cf.* the characteristic questions: "382. Are there traces, among the . . . . caste or tribe, of village communities or of a communal organisation embracing groups of villages? 386. Are there any traces of the periodical redistribution of common arable land among the members or sections of the community? 389. Do communal rights of pasturage exist or are they asserted over land which is private property?" &c.

mention that both in Sanskrit and in Iranian, words for settlements, &c., are formed from the root *kṛṣ*, *karsh*, "to plough": thus, Sans. *kṛṣṭáyas* (especially *páñca kṛ.*) means literally "ploughman," then "a settled people," "men"; Zend *karsha* in *karshô-vâza*, "founding settlements" (Geiger, *O. C.*, p. 399).

What cultivated plants belong to the primitive Indo-Iranian period cannot be determined owing to the scantiness of our sources in this matter. The only plant mentioned both in the Avesta and also in the Rigveda, is *yava*, but—even if this word meant barley in later Sanskrit, and also in modern Iranian dialects (Pers. *jaw*, Osset. *yæw*, "barley," but Digorie *yau*, "millet")—it is still doubtful whether the word originally had such a restricted meaning.

The flax of the Europeans (*cf.* above, p. 294) has its place taken by the hemp of the Indo-Iranians (Sans. *bhaṅgá* = Zend *baṅha*), which was originally prized for the intoxicating effects of its decoctions. In the Rigveda *bhaṅgá* is an epithet of soma; as hemp it appears for the first time in the Atharva Veda. In Iranian *beng* is to this day a name for the intoxicating haschisch (W. Geiger, *O. C.*, p. 152).

We shall speak of Sans. *sóma* = Zend *haoma* in chapter vii.

As for cultivated plants mentioned not in the Rigveda, but in other Vedic texts, wheat and beans (*cf.* above, p. 284) seem to have joint names in Sanskrit and modern Persian dialects.

CHAPTER VI.

COMPUTATION OF TIME.

Divisions of the Year—Originally Two—Additions—The Year—Moon and Month—Computation of Gestation—Superstition—Lunar and Solar Year—Names of the Months—Computation by Nights—Day—Divisions of the Day.

If to the history of agriculture and cultivated plants I append a short review of the origins of the Indo-Germanic methods of computing time, it is because the two things are causally connected with each other. J. Grimm (*Geschichte d. D. Spr.*) rightly remarks: "Agricultural peoples are the first to attend to the service of the gods and the computation of time;" and it is obvious that he who commits the seed to the bosom of the earth, and hopes for wealth and happiness for himself and his family from its growth and prosperity—he is the first man in the country-side to take a lively interest in the precise computation of time. Now, as we have seen in the preceding pages that the Indo-Europeans in their primeval period were far from having attained the height of permanent agricultural life, it will be important to investigate whether what we can ascertain as to the oldest method of computing time is in harmony with this conclusion.

Nor will it be less valuable—for the purpose of understanding the historic calendars of the individual Indo-Germanic peoples—to discover the common element at the bottom of them all. And, thirdly, it is beyond dispute that the divisions of time made by a people, *e.g.*, the question how many and what seasons of the year it distinguished, are closely connected with the position and climate of the country in which it dwells, so that we may hope to gain some further data for this subject, *i.e.*, the question of the original Indo-European home.

I. The Seasons of the Year.

In the case of a people that lives almost exclusively on the produce of its herds, two observations are forced on the notice of man by the influence of changes of weather; that is to say, he distinguishes between the season of the year in which his herds have to seek their food on the open pasture-land, and that in which they have to be sheltered from the horrors of the weather.

in subterranean caves in the safety of the pen, or in the hospitable stall.

If we may believe Vámbéry (*Primitive Kultur*, p. 162, *f.*), the Turko-Tataric peoples in their primitive period distinguished two seasons of the year only, summer and winter, in the name of which the conditions of nomad life are clearly mirrored. According to him the name of summer, *jaz*, amounts to "the season of the year in which a people scatters" (*jaz*, "to spread out," *jazi*, "plain," *jazilamak*, "to go to the pasturage, to the steppes"), whereas the name of winter, *kiś*, *kis* meant the snowy season of the year (*kaj-iś*, *kaiś-kiś*, "snow-drift").

What can we infer as to the conditions of life amongst the most ancient Indo-Europeans in this respect?

The season of the year most sharply defined in the Indo-Germanic languages, and most widely spread amongst them, is beyond question winter: Zend *zyā*, "winter," G. χιών, "snow," Lat. *hiems*, I. *gam*, "winter;" Sans. *hāyana*, "year," Zend *zayanô*, "winter;" Sans. *hémantá*, "winter," G. χειμών, "storm," Armen. *jiun*, "snow," Lith. *źiema*, O.S. *zima*; Sans. *himá*, "cold, winter," Zend *zima*, "winter, year," Arm. *jmeṙn*, "winter," Alb. *dimen*, "winter," Teut. *ên-gimus*, "annual" (*lex Salica*; *Kern Taal u. Letterbs*, ii. 143), Lat. *bîmus*, *trîmus*, &c., "biennial, triennial," G. χίμαρος, χίμαιρα, "he-goat, goat" ("yearling").

The root is unknown; but the change of meaning in the stock of words quoted (winter, storm, snow) mirrors the conditions of a northern winter, and this is confirmed by the presence of an Indo-Germanic root for "to snow:" Zend *snizh* (but *vafra*, "snow" = Sans. *vápra*, "earthwork"?), Lat. *ninguere*, *nix*, G. νίφει, νίφα, Goth. *snáivs*, Lith. *sniigas*, O.S. *snĕgŭ*, I. *snechta*. The comparison of O.H.G. *îs* with Zend *isi*, "ice," is doubtful.

Over against this stock of words for winter are three equations which agree in denoting a more pleasant season of the year. They are:—

1. Sans. *vasantá*, Zend *vaṅhri* (Mod. P. *behar*), Armen. *garun*, O.S. *vesna*, O.N. *vár*, Lat. *vêr*, G. ἔαρ, "spring," Lith. *wasarà*, "summer."
2. O.S. *jarŭ*, "spring," G. ὥρα, "pleasant season of the year," Goth. *jêr*, "year," Zend *yâre*, "year."
3. Sans. *sámâ*, "half-year, year," Zend *hama*, Armen. *amarn*, *am*, "year," I. *sam*, *samrad*, O.H.G. *sumar*, "summer."

The question then presents itself whether the above series of words are only different ways of expressing the same notion, or whether they warrant us in assuming that the warm and pleasant season of the year had already been divided by the original people into spring and summer. I believe the latter was not the case; that on the contrary everything serves to indicate that the Indo-European year was divided into two parts, summer and winter. And I believe I can make the following points in support of this view:—

1. The above equations by no means agree in their meanings

Whereas in the other derivations of the root *ves* the notion of spring inheres, Lith. *wasarà* means "summer," and it is only *pawasaris* that means "spring." Again, G. ὥρα (No. 2) is the pleasant season in general, as is shown particularly by ἀπ-ώρη, "harvest" ("late summer"). In the case of No. 3 we probably have to start from the meaning of "half-year," preserved in Sanskrit, as scarcely anyone will be willing to separate *sámā* from *samás*, "equal." Hence the conception of summer—the two meanings coexisted in the primeval period—as a term of six months.

2. Nearly everywhere in the chronology of the individual peoples a division of the year into two parts can be traced. This finds linguistic expression in the circumstance that the terms for summer, spring, and winter have parallel suffix formations. As in the primeval period **ǵhi-m* and **sem-** existed side by side, so in Zend *zima* and *hama* correspond to each other (Spiegel, *Arische Periode*, pp. 21, 23), in Armenian *amaṙn* and *gmeṙn* (Hübschmann, *A. St.*, i. 40), in Teutonic *sumar* and *wintar*, in Celtic *gam* and *sam*, in Indian, *vasantá* and *hémantá*. There is absolutely no instance in which one and the same language shows identity of suffixes in the names of *three* seasons of the year. In Slavonic, also, the year is divided into two principal divisions, summer (*leto*) and winter (*zima*); and, finally, evident traces of the old state of things are not wanting in Greek (cf. *Od.*, vii. 118: τάων οὔποτε καρπὸς ἀπόλλυται οὐδ' ἀπολείπει χείματος οὐδὲ θέρεος) and Latin (Unger, *Zeitrechnung der Griechen und Römer: Handbuch der Kl. A. herausg. v. I. Müller*, i. 556 and 610).

3. Most Indo-Germanic peoples' views of nature are pervaded by the idea of a conflict between the pleasant and the wintry season of the year. In the Zend Avesta the story is: Perpetual summer reigned in the *Airyana-vaêjahi*, but *Aŋrô-mainyus* could not suffer this happiness to endure; therefore he created a counteraction, a great snake and the winter, produced by the Dævas. Our own Teutonic antiquity developed the contrast between summer and winter in an extremely original manner, for which I refer to J. Grimm's *Deutsche Mythologie*. Slavonic tales tell of a youth or a young maiden who is rescued from the power which had bound her in an enchanted palace of crystal. This reminds us of our Sleeping Beauty: the kiss of spring releases the earth plunged in the deep slumber of winter. In warmer climes, peopled by Indo-Europeans, this simile naturally loses its force. In India all recollection of it seems to have been transferred to the struggle between Indra and Vritra, who has captured the cloud cows.

For all these reasons I believe we have the right to presuppose an original division of the Indo-Germanic year into two seasons. The coexistence of the three above-mentioned terms for the pleasant season of the year may be explained by assuming that the words formed from the root *yē*, "to go," were originally adjectives to **semā*, so that **yērā semā* may have meant the half-year in which "one goes out, goes to the pasture-land." (*cf.* Zend *ā-yā-thra*, "the

* *Cf.* Brugmann, *Grundriss*, ii. i. 458.

[illegible] the cattle from pasture," Sans. *yá-ri*, "going out to [illegible]" Roth, *Z. d. D. M. G.*, xxxiv. 704, and Turko-Tat. *jaz* above, p. 301). The words formed from the root *ves*, however, certainly [illegible] designated the beginning of the pleasant season (*cf.* O.H.G. *[illegible]*, *óstara*, "ancient spring festival," from root *us* : *ves*), as is shown by the fact that none of them can, like the derivatives from [illegible] *ĝhei*, serve to designate the whole year.

Now we have already seen that the Indo-Germanic population of Europe, like the Indo-Iranians before their separation, must have made some not inconsiderable advances in the matter of agriculture; and thus we might expect to find amongst both groups of peoples a third season of the year designated, which did not indeed drive out the ancient division of the year into two parts—for this continued as we have said into historic times—but which did bring into particular prominence that portion of the pleasant season (**sem*) in which things ripened and crops were got in. In matter of fact this seems to have been the case. In Indo-Iranian, Sans. *çar-ád* and Zend *saredha* agree, and in all probability belong to the Sans. root *çar*[2], "to seethe, cook." In European [illegible] inclined, in spite of certain phonetic difficulties, to join [illegible] (*B. B.*, i. 329) in comparing Goth. *asans*, "θέρος" (θερίζειν, [illegible] gather crops," O.S. *jeseni*, Russ. *oseni*, Pr. *assanis*, "harvest") [illegible] Lat. *annus*, "year" (lit. "summer," "crop-time;" *annus* for **ānus* from **as-no*; cf. *cunnus* for **cūnus* from **cus-no*; Stolz, *Lat. Gr.*, p. [illegible]), *annōna*, "produce in the shape of grain."* The common root would be the *as*, which is widely spread in ancient Teutonic in the meaning of "working in the fields" (M.H.G. *asten*, O.H.G. *[illegible]*). *Cf.* Kluge, *Et. W.*[4], p. 73; Thurneysen, *K. Z.*, xxx. 476, differs.

If we now leave these primeval expressions and turn to the subsequent additions made by the most important peoples to their terminology, we find it remarkable to begin with that Teutonic has retained but few traces of derivatives from the roots *ves* and *ĝhei*. The place of the former has been taken by O.H.G. *lenzo*, *langiz*, A.S. *lencten*, which is confined to West Teutonic languages, and is altogether obscure; of the latter by the common Teutonic Goth. *[illegible]*, which perhaps belongs to the O.I. *find*, "white," and so designates the season of the year after the colour of the snow (Zeuss, *Keltische Briefe*, p. 113). A parallel to this is afforded by the Lithuanian name for the harvest, *rúdù* : *rùdas*, "red." To bring the Teutonic harvest we have the important record of Tacitus (*Germ.*, 26): "Hiems et ver et æstas intellectum ac [illegible] alla habent, autumni perinde nomen ac bona ignorantur." It follows from this that the O.H.G. *herbest*, A.S. *hærfest*† (O.N. *haust* can scarcely be connected), which is confined to

* That the agricultural Romans chose an expression which literally meant "harvest crop" to designate the year seems likely enough. Others, indeed, [illegible] Lat. *annus* : Goth. *aþn*, "year."

† The root, however, is of course the same as in Lat. *carpere*, G. καρπός. [illegible] *choref*, "harvest" : *chāraf*, "pluck."

High German and Dutch, did not establish itself until after Tacitus as the word for the crop of home *autumnus*, *-i*, of fruit. Previously, as it is an ancient formation, it may have been synonymous with Goth. *asans*.

In the Slavonic languages the Common Slav. *leto* alone remains for us to mention. It is usually connected with Lith. *lytus*, "rain," which linguistically is correct enough, but as an explanation of the meaning is extremely remarkable. See below.

It is intelligible that in southern climes new expressions became necessary for summer (Lat. *æstas* : *æstuo*, G. *θέρος* = Armen. *jer* : Sans. *gharmá*, "glow." Lat. *formus*), expressing the warmth of the season. Summer is here the harvest season (*θερίζειν*, "to harvest"). Lat. *ver* and G. *ἔαρ* attain the rank of a separate season. Then in both languages various names for the harvest, the time of fruit crops and vintage, grow up: in Lat. *autumnus*, which is perhaps assimilated in its suffix to *Vert-umnus* (: *verto*), "the god of the turning seasons of the year," of the *περιτελλομένων ἐνιαυτῶν* (*cf.* Sans. *ritu-vṛtti*, "turn of the seasons," "year"); the **auto* which remains I would compare with O.N. *auðr*, "wealth." In Greek, even in Homer, the *ὀπ-ώρη* (*cf.* German *spätjahr* = harvest) follows the *θέρος*, the *τεθαλυῖα ὀπώρη*, the time of great heat (*Il.*, xxi. 346), but also of the pouring rain (*Il.*, xvi. 385). Attempts at dividing the year into six or seven portions are also found amongst the Greeks (Unger, *loc. cit.*, p. 561).

In the Vendidâd of the Avesta, as already remarked, winter and summer (*zyâo*, *zima* : *hama*) form the basis of the computation of time. The short transitional season of spring (*vanhri* and *sarəmaya*,* "the green": Sans. *hári* : O.S. *zelenŭ*, "green") is not originally taken into account. The word created in the Indo-Iranian period for fruit-time, *saredha*, has taken on the meaning of "year," though in Ossetic *särdä*, "summer," has preserved the proper sense of "time of ripe fruit" (*särdä* and *zumäg*, "summer" and "winter," by the side of a more recent division into five parts; Hübschmann, *Osset. Spr.*, p. 63).

On Indian soil a steady increase in the number of the seasons may be observed. As *sámá* was only preserved in the sense of "half-year," "year," the terms inherited from the primeval period were *vasantá*, *hémantá*, *çarád*. The division of the year into three parts (*trayô vâ ṛtavah saṁvatsarasya*, Çat. Br.) in the Vedic period tended, the further behind the old abodes in the Punjaub were left, to become a division into five seasons: *vasantá*, *grîshmá* (*æstas*, *θέρος*), *varshâ* ("rainy season;" *cf.* Slav. *lěto*), *çarád*, *hémantá*, *çiçira*, (*çiçira*, "cool"), or, dividing the last two, into six seasons (cf. *B. R.*, under *ṛtú*, "season of the year"). The modern Hindus, finally, distinguish: *Baras*, the rainy season, July and August; *Scharad*, the depressing, humid seasons after the rain, September and October; *Hemanta*, the cool season, November and December; *Sisira*, the dewy season, the period of cool morning and of cloud, January and February; *Wasant*, spring, March and

* *Cf.* Roth, *Z. d. D. M. G.*, xxxiv. 702.

Alb. *Gërsa*, the hot, sunny, hot time of the year, May and June (Schlegel-Weber, *Indica*, ii. 173, note).

To return to the primeval period, there is still the important question whether the conception of winter and summer combined into one whole, the conception of the year, had found expression in language.

This appears actually to have been the case. We find agreement between: Sans. *sa-vat-sará*, "year," *samvatsara*, "a year long," *parivatsará*, "a full year," *vatsará*, G. Fέτος,* "year," Alb. *vit*, "year," *si-vet*, "in this year" (G. Meyer, *Alb. Gr.*), Lat. *vetus*,† "old," O.S. *vetichŭ*, Lith. *wetuszas*, &c. Further, Sans. *parâ*, Pamir D. *pard*, *parsuz* (Tomaschek, *C. St.*, p. 19), Osset. *fâre*, N. Pers. *gâr*, Armen. *ĥeru* (Hübschmann, *Arm. St.*, i. 39; *Osset. Sprr.*, 65) = G. πέρυσι, O.N. *fjorr*. There is yet a second Indo-Germanic equation to produce: Lith. *mêtas* = Alb. *mot*, "year" (*B. B.*, viii. 9), the original meaning of which (root *mĕ*) is "measure of time," just as in Slavonic words meaning "year," like Bulg. *godina*, Serv. *god.* and words meaning "time," "feast" (Vel. *gody*, Czech *hod*), are derived from the same root;‡ Miklosich, *Et. W.*, p. 61. It seems to me, therefore, not impossible that O.S. *lĕto*, "summer," "year," must rather be connected with L. *lūdi*, "festival," "feast-day," than with Lith. *lytus*, "rain."

Other means, however, of counting the year may have been employed in the primeval period than the ancient neuter *wetos*, which perhaps originally meant nothing more than "past time," "antiquity." On the one hand, in ancient texts the seasons of the year are enumerated in order.

Thus, in the Hildebrandslied we have: *Ic wallôta sumaro enti wintro sehstic* (= 30 years, 60 half-years, A.S. *missere*, O.N. *missari*); in Heliand, and elsewhere, *thea habda sô fîfta wintro endi sumaro afarbî*. In the Rigveda, too, we have such sentences as "live for a hundred years, a hundred winters, a hundred springs, and increase in strength." Similarly in Homer and elsewhere. It is obvious that expressions of this broad and unwieldy description were principally employed on poetic occasions, *e.g.*, in the pompous

* In the G. ἐνιαυτός I divide thus: ἐν-αυτό-ς, and compare *αὐτός*: Fέτος from ἀ-Fετ-ό-ς (*cf.* ἀ-μός from *ἀ-Fετ-μός* from ἀ-Fετ-μήν from ἀ-Fετ-μην; G. Meyer, *Gr. Gr.*, § 101). The first element is ἐνιν- (: ἔνος, ἔνο-ς, "the earlier") = Sans. *sánat*, "old." *Od.*, i. 16:—

ἀλλ' ὅτε δὴ ἔτος ἦλθε περιπλομένων ἐνιαυτῶν
τῷ οἱ ἐπεκλώσαντο κ.τ.λ.,

could, *e.g.*, really be: "When—as the earlier years turned by—that year came which," &c.

Ascoli (*K. Z.*, xvii. 401, *ff.*) gives a different explanation.

† The Lat. adjective also had originally the meaning of "year, age, antiquity" (*cf.* K. Brugmann, *K. Z.*, xxiv. 38; J. Schmidt, *Die Pluralbildungen der idg. Neutra*, p. 84). A different explanation in Thurneysen, *K. Z.*, xxx. 485.

‡ With Slav. *godŭ*, "time, festival, year," I compare G. ἐπι-βδ-ά, "day after the festival" (root *gedh*). The received interpretation of this word as "that which follows on foot" altogether omits the reference which the word always has to the festival.

invocations of health and happiness which were known even to the primeval period.

For the purposes of daily life it sufficed to designate the [illegible] year or the past by the name of one of the seasons (*years pri[illegible]*). The Indo-Germanic languages are pervaded by an [illegible] tendency to forget the original meaning of the name of a [illegible] and to employ it to designate the year as a whole. In this [illegible] we have:—

1. The Winter: Derivatives from the root *ghei* (*cf.* above, p. [illegible]). *Cf.*, further, Goth. *vintrus* (*qimô blôprinnandei twalif wintrus*) [illegible] Zend *aiwyâma*, "winter and year." The frequency of this [illegible] of meaning from winter to year is an indication of the impor[illegible] part played by winter in the climate of the original land.

2. The Autumn: Zend *saredha* (*cf.* above, p. 304). [illegible] Sans. *çarád* is very frequently used for "year." A. Weber (*Ind. Stud.*, xvii. 232) remarks on this: "The formal enumeration of years, in the aphorisms of the ritual text, down to the *Çrauta sûtra*, is by harvests. This represents an intermediate stage between the old method of counting by winters (*himás*) and the later method by rainy seasons (*varshâni*), corresponding to the change of abode which had taken place in the meanwhile."

3. The Summer: Derivatives from the root *sem* (see above, p. 301). To these we may perhaps add O.S. *léto*, "summer," "year" (*cf.* however, above, p. 305). Derivatives from the root *ye* (see above, p. 301).

The changes of meaning here indicated in Indo-European are repeated in the Finn languages. Thus, we have in Mord. [illegible] "summer," "year," in Ostjak *tal*, "winter," "year;" and, further, in Ostjak *tallwi*, "winter and summer" = year. These languages have also a common word for the concept year: Finn. *wuosi*, Weps. *wos*, Ostj. *ōt*. Tomaschek regards this as identical with Indo-Germanic *vet*, *at* (*Pamir D.*, p. 19), a remarkable connection, if correct, in the history of culture.

II. Moon and Month.

Of the stars that deck the heavens' vault, it was the moon with her perpetual changes that first proclaimed the course of time to the Indo-Europeans as to other peoples. "Omnium admirationem," says Pliny (*Hist. Nat.*, ii. 9. 41), "vincit novissimum sidus, ... familiarissimum." Moon and month coincide, with only small differences of suffix, in Indo-European [illegible]. Zend *mâo*, O. Pers. *mâha*, in O.S. *mêsec*, [illegible] "month" only), in Goth. *mêna*, "moon," *mênôþs* [illegible]. Frequently it is only the name of the measure of time that survives from this root, while new names have come into the constellation: thus G. *μήν* : *σελήνη*, "moon" (originally "[illegible]ness"), Lat. *mensis*, (*Mene*, "dea mensium," from *lu[illegible]* "to beam"), Armen. *amis*, "month" [illegible] *mi* : *ékeu*, "moon" (of obscure origin). *Cf.* also Alb. *muej*, "month"

The root of the whole of this stock (on whose phonetics see J. Schmidt, *K. Z.*, xxvi. 345) is rightly looked for in the Indo-G. *mê*, Sans. *mâ-mi*, "I measure," so that the moon presents herself as "the measure of time," as Max Müller expresses it: "the golden hand on the dark dial of heaven."

In the month as determined by the moon we have then to see the first and surest beginnings of a systematic computation of time amongst the Indo-Europeans.

The purely lunar month consists, of course, of 29 days, 12 hours, 44 minutes, 3 seconds; and that it continued for a considerable time to have the value of the period assigned to it by nature, not only in the primeval age, but also amongst the individual peoples, is indicated in all probability, amongst other things by the fact that one of the most important natural processes, the term of which could be accurately reckoned, gestation, was fixed in early ages not at nine but at ten months.

If, in the Vedic period, a child has to be indicated as near birth, it is called *daçamasya*, "a ten months' child." In a prayer for the fertility of woman the words used are:—

Tám tê gárbham havâmahê—daçamê mâsí sûtavê.

"We pray thee for the delivery of the fruit (previously described) in the tenth month." So, too, in the Avesta the normal time for confinement is the tenth month (Geiger, *O. C.*, p. 236), in Herodotus (vi. 69) equally, and also amongst the Romans, *e.g.*, the same computation occurs in the Twelve Tables (Unger, *loc. cit.*, p. 616). *Cf.* Leist on the conception of a gestation-year of ten months (*Altarisches Jus Gentium*, p. 262, *ff.*).

The month is naturally divided, by the two opposite phases of the full moon and the new moon, into two halves, which the Indians call *púrva-pakshá* and *apara-pakshá*, the "front" and "hind" (Zimmer, *Altind. L.*, p. 364), or *çuklapaksha* and *kṛshṇa-paksha*, the "bright" and "dark" halves. The expressions *yáva* and *áyava* also occur in Vedic texts for the same ideas. I should be inclined to connect this *yáva* with *yúvan*, "young" (*yáv-îyans*, *yáv-ishṭa*), and Lith. *jáunas menû*, "new moon."

The division of the month into two parts which we have found amongst the Indo-Europeans is also presupposed in the Avesta (Geiger, *loc. cit.*, p. 316). In Greek it is pointed to by the expression μηνὸς ἱσταμένου and μηνὸς φθίνοντος, although in historical times a division of the month into three decades of days (the waxing crescent, more or less full disk, the waning crescent) was brought into connection with it. Amongst the Teutons also, in Tacitus' account (*Germ.*, c. xi.), the new and full moon appear as the most prominent phases of the moon ("cum aut inchoatur luna aut impletur"). On Roman ground, the *idus*, "the brighter nights" (G. ἰθαρός, αἴθω, "burn"), correspond to the full moon, to the new moon the *calendae*, "the proclaiming day" (*calare*, καλεῖν), so named "because on the first day of every calendar month at the command of the king (later of the sacrificial king) the pontifices proclaimed in the presence

of the multitude assembled in front of the city, till whether five or seven days were to be reckoned from this day to the day of the first quarter inclusive" (Mommsen). The relation of the *nonae* (*dies ante novem dies*), in their origin, to the *calendae* and *idus* has not yet been clearly made out (*cf.*, amongst others, Flex, *Die celtische Monatsregung der Römer*, Jena, 1889). Not a trace of any further sub-division of the month into more than two parts can be discovered in the primeval period.

The moon is the measure of time, and consequently has power over the growth and decay of things as influenced by the course of time. Again, the light of the moon came at an early period to be credited with an influence on the vegetation of the earth, on man and his destiny. It is not the object of this work to trace the mark left on all ages of the past by this belief, which is often weird and gloomy, though often cheerful and child-like. We may, however, mention some few of the most ancient pieces of evidence which show what an important influence the belief in the significance of the phases of the moon has frequently had on the history of the Indo-Germanic peoples. "Cum ex captivis quaereret," says Cæsar (*B. G.*, i. 50), "quamobrem Ariovistus proelio non decerteret, hanc reperiebat causam, quod apud Germanos ea consuetudo esset, ut matres familiae eorum sortibus ac vaticinationibus declararent, utrum proelium committi ex usu esset necne; eas ita dicere: non esse fas Germanos superare, si ante novam lunam proelio contendissent." The explanation is given by Tacitus (*Germ.*, c. xi.): "Coeunt nisi quid fortuitum et subitum incidit certis diebus cum aut inchoatur luna aut impletur; nam agendis rebus hoc auspicatissimum initium credunt." In an exactly similar way the Spartans, who were later than the other Greeks in getting enlightenment, sent the Athenians no assistance at Marathon because they dared not march out μὴ οὐ πλήρεος ἐόντος τοῦ κύκλου (Hdt., vi. 106).

Whether the lunar month is multiplied by 12, our usual number of months, or by 13, the number of months common amongst many east Asiatic peoples (*cf.* Schiefner, *Das dreizehnmonatliche Jahr und die Monatsnamen der sibirischen Völker*, *Mélanges Russes*, Tome ii. 307, *ff.*), in neither case does the number of months in the solar year give 365¼ days; and this raises the important question whether an attempt was made as early as the primeval period to equalise the lunar and the solar year.

As a matter of fact, Albrecht Weber in his treatise, *Zwei vedische Texte über Omina und Portenta*, has, on p. 388, put forward the conjecture that the twelve hallowed nights which make their appearance in Vedic antiquity, and which we encounter also in the west, especially amongst the Teutons,* are to be regarded as such an attempt. This scholar has, however, more recently himself raised doubts of this, as he says in *Indische Studien*, xvii. 224: "And when the question is raised, what then may we regard

* A special investigation of the "twelfths" would be welcome (*cf.* E. H. Meyer, *Indische Mythen*, ii. 526; Ludwig, *Der Rigveda*, vi. 232).

as really at the bottom of these twelve days, it is at least an obvious idea to see in them an attempt to balance the lunar year of 354 days (beyond a question the oldest mode of computing the year) with the solar year of 366 days; and so, in spite of the lunar computation common amongst the people, to take into account the actual facts, according to which the "course of the sun" determines the extent of the year. By putting on the twelve superfluous days to the end of the lunar year on the one hand the computation of time was corrected, on the other a sacred time was obtained which was regarded as of good omen for the coming year. Such an explanation is open to suspicion, because then the agreement which exists between Indians and Teutons in regard to the Twelfths would compel us to assume a correct comprehension of the lunar and solar year for the primitive Indo-Germans; and that after all has not inconsiderable difficulties of its own, inasmuch as one can hardly venture to ascribe such knowledge based on their own observation to the people of that period."

On general grounds, I too consider it improbable that the arithmetical problem involved in balancing the lunar and solar year was solved by the primitive people. The same conclusion too is indicated by special considerations.

The references to time and its computation contained in the ancient names for the sun * are as scanty as we have seen the moon to be important, both in fact and language, as a "measure of time." In Greek, the word λυκάβας, "year" (-αντ-), which first appears in the *Odyssey*, might perhaps be cited here, if it is really to be taken as meaning "course of time." In Italian, the Umbrian *ose*, Pelignian *uus*, "anni, annum" (Bücheler, *L. J. v.*), which seems to correspond to the Etrurian *Usil*, "Sol et Eos," Lat. *aur-ōra*, might belong here. Sans. *ṛtu-vṛtti* (above) is quite a recent formation. I know, however, of no other designation of the year derived from the course of the sun, or from a name for the sun at all. When, therefore, Ideler makes the following observation on the usage of language in his *Handbook of Chronology*: "Finally, as regards the year, the only remark that need be made, in addition to what we have said of its duration and different forms, is that the designation for this concept in nearly all languages designates a circular course, movement in an orbit," this is distinctly untrue of the Indo-Germanic family.

Further, the following consideration confirms me in the conviction that the Indo-Europeans before the dispersion had not got beyond computing time by means of the purely lunar month; as soon as the lunar year comes to be squared with the solar year, and the month is disconnected from the changes of the moon in which it had its origin, it is self-evident that the months of which the circle of the year was composed become definite, annually recurring units to which it was absolutely necessary that names should be given. Had this step been taken as early as the

* For the names of the sun, see ch. xiii.

primeval period, we should confidently expect that, in the great number of Indo-Germanic names for the months handed down from ancient as well as recent times, traces at least would be found here and there of some original agreement between them. Only the fact is just the opposite. Not only do the groups of languages, into which the Indo-Germanic family of speech is divided, altogether diverge from each other in their names for the months, but the members of these groups, *e.g.*, of the Teutonic and Slavonic, of the Lithuanian, show such a variegated diversity in their dialects as to exclude the faintest notion of any original agreement.

The difference between the Greek and the Roman names for the months is excellently characterised by Mommsen: "Whereas by far the larger number of the Greek months derive their names from the gods and the festival of the gods, few from the characteristics of the seasons, and perhaps none from the mere number of their place; amongst the unimaginative Latins—we have no information about the Sabellians in this respect—at least half of the months, from Quinctilis to December, are named merely by their numbers, the majority of the remaining Latin and Sabellian months (*Aprilis, Maius* or *Maesius, Junius, Floralis, Januarius, Februarius, intercalarius*) from the characteristics of the seasons or peculiarities of the calendar, and only one single, though indubitable, one from a deity—the month of Mars, which god appears here, without companions, and at the head of the Latin, and probably also of the Sabellian, calendar, more decidedly than anywhere else as *par excellence* the tribal and national god of the Latins and Sabellians, that is to say of the Italians."

A wide field of observation is revealed when we set foot in northern Europe upon Teutonic* and Slavonic† ground. Here native names spring up in luxuriant abundance in nearly every district, borrowed sometimes from the occupations of daily life, sometimes from time or weather, sometimes from plants and animals, sometimes from religious life, and generally from Christianity, but always agreeing in the fresh and natural character stamped upon them.

Not until the Roman calendar becomes known, and succeeds in gradually and stealthily smuggling in its foreign names, are the names of the months established in a fixed order.

With what difficulty, however, the popular mind, content as it is with what is old, becomes habituated to precise computation by days and months, is shown by districts in which expressions such as *in der sât, in dem snite, im brâchet, im houwet*, have only slowly been supplanted by *sâtmân, schnitmonat, brâch-* and *hôumonat*.

* *Cf.* J. Grimm, *Geschichte der deutschen Sprache*, c. 6, "Feste und Monate;" and K. Weinhold, *Die deutschen Monatnamen*, Halle, 1869.

† *Cf.* F. Miklosich, *Die slavischen Monatsnamen* (*Denkschriften d. philos. hist. Cl. d. kais. Ak. d. W.*, xvii. 1–30), Wien, 1868; Krek, *Einleitung in die Slav. Literaturgeschichte*[2], p. 510, *ff.* Schiefner's above-mentioned work, *Das dreizehn monatliche Jahr*, &c., is important for comparison.

I am inclined to regard the much-vexed* *Gâhanbârs*, the six annual festivals of the Avesta, as originally a means of this kind for determining time, and as intermediate in a sort of way between the names of the seasons and of the months. Thus, *Paitishahya* (: *hahya*, "sowing") is "the time which brings the grain with it;" *Ayâthrima*, "the time of calling the cattle home" (*cf.* above, p. 303); *Maidyôzaremya*, "the middle of verdure," &c.

We saw above, on p. 303, that the oldest, indeed a prehistoric, expression of this kind amongst the Europeans is the equation Goth. *asans* (O.S. *jesenî*), Lat. *annus*, *annôna*, "the time of harvest."

III. Night and Day.

As the measure of time in the primeval period was the moon and not the sun, the computation of time by nights and not by days needs no explanation. Nor should it be necessary to adduce evidence for the existence of this well-known custom of the remotest times. In Sanskrit *daça-râtrâ* (: *râtrî*, "night") means a period of ten days, *niçâniçam*, "night for night" = "daily." "Let us celebrate the ancient nights (days) and autumns (years)," says a hymn. In the Avesta the practice of counting by nights (*kshapan*) is carried still further. Amongst the Teutons, in whom this usage struck Tacitus even ("nec dierum numerum sed noctium computant," *Germ.*, xi.), formulas such as *sieben nehte*, *vierzehn nacht*, *zu vierzehn nechten* are of the most frequent occurrence in ancient German law. In English *fortnight* and *sennight* are used to this day.

The same custom among the Celts is testified to by Cæsar (*B. G.*, vi. 18: "Galli se omnes ab Dite patre prognatos prædicant idque ab druidibus proditum dicunt. Ob eam causam spatia omnis temporis non numero dierum sed noctium finiunt"). Intimately bound up with this is the circumstance that the night, from which according to the ancient popular fancy the day is born, precedes the day. In ancient Persian cuneiform inscriptions which adhere strictly to formulæ, *kshapavâ raucapativâ* means "by night and day." In Sanskrit, besides *ahôrâtra*, *aharniça*, we also have *râtryahan*, "night and day," and *naktamdinam*, "by day and night." The Athenians began the complete day (νυχθήμερον) at sunset, the Romans at midnight (Unger, *loc. cit.*, p. 552). "Nox ducere diem videtur," says Tacitus of the Teutons. "Dies natales et mensium et annorum initia sic observant, ut *noctem dies subsequatur*," says Cæsar of the Celts.

It harmonises with this importance of the night as a primeval

* *Cf.* A. Bezzenberger, "Einige avestische Wörter und Formen," *Nachrichten von d. K. Gesellschaft der W.*, p. 251, *ff.*, Göttingen, 1878; R. Roth, "Der Kalender des Avesta und die sogenannten Gâhanbâr," *Z. d. D. M. G.*, 1880, p. 698, *ff.*; W. Geiger, *Ostiranische Cultur*; De Harlez, *Der Avestische Kalender und die Heimat der Avesta-Religion. Verh. d. internat. Orientalisten-Congresses*, ii. 237, *ff.* All these passages deal also with the proper names for the months in the Avesta and in ancient Persian. For the ancient Indian names for the months, see Zimmer, *Altind. Leben*, p. 370.

measure of time that the individual peoples have adhered with great tenacity to its Indo-Germanic names, as also to those of winter and month; *cf.* Sans. *nákti-s*, *nákta* (also *aktú* = **nktú*), Zend *nakhturu*, "nightly," G. νύξ, Lat. *nox*, O.S. *nošti*, Lith. *naktis*, Alb. *nate*, Goth. *nahts*, O.I. *innocht*, "this night." Original Indo-Germanic form **noqt-*. The root is obscure. The equation, Sans. *kshap*, *kshapâ* = Zend *kshap*, *kshapara*, is confined to Indo-Iranian. Sans. *râtri*, *râtra* (: Sans. *ram*, "rest," or root *rô*, "to rest," in O.H.G. *ruowa*, A.S. *rôw*, "rest," **rm̥-tro* or **rô-tro*), the obscure Sans. *nir*, f., "night," and O.I. *aidche*, *oidche*, stand isolated. In contrast to this agreement in the names for night, there is diversity amongst the Indo-Germanic languages as to the names for day, not so much in the root (Sans. *div*, "to beam") as in the formation of the suffixes; the close unity of our stock of languages in the terminology of winter, moon-month, and night, the three principal pillars of the most ancient mode of computing time, would not be given by the agreement exhibited in the names for summer, sun, and day.

The ancient name for day was, as we have said, a formation from the root *div* (*cf.* Sans. *div*, *dyávi-dyavi*, *divë-divë*, "day for day," Lat. *diês*, O.I. *dia*, Armen. *tiv*; Sans. *dina*, O.S. *dini*, Lith. *diênà*). Sans. *dhan* = Iran. **azan* (Spiegel, *A. P.*, p. 98) is confined to Indo-Iranian. O. Pers. *rauca* (: *luc-ere*, Mod. Pers. *rôz*), Goth. *dags** (: Sans. *dah*, "to burn," Lith. *dãgas*, "harvest"), and the unexplained Zend *ayare* (Pamir D. *yīr*, *yor*), G. ἡμέρα, ἦμαρ (Armen. *aur*, "day" (?); Hübschmann, *A. St.*, i. 55), stand by themselves.

As the change from winter to summer is expressed by formations from the root *vas*, "to light up" (*cf.* above, p. 301), so the same root serves to express the change from night to day. From, *ves*, *us*, on the one side Sans. *vásará* "the whole day," is formed, on the other the Indo-Germanic name for the oft-sung, rosy-fingered dawn (Sans. *ushâs*, Zend *ushanh*, G. ἠώς, also ἦρι, "early," αὔριον, "morrow," Lat. *aurôra*, Lith. *auserà*).

In Gothic the early morning twilight is called *ûhtvô*, a word rightly compared with Sans. *aktú*, "light, day," G. ἀκτίς, "beam," Lith. *ankstí*, "early." Thus we get an original form *nqt-*, which one is reluctant to dissociate from the above-mentioned *nqt-* = Sans. *aktú*, "night": *noqt-* = Sans. *nákta*, which is phonetically identical. Indeed, a connection in meaning also can be shown to be probable. On closer investigation we find that Goth. *ûhtvô*, as J. Grimm (*Myth.*, ii.[3] 708) remarked, means "the very earliest morning twilight, really the last moment of the previous night" (ἔννυχον, St Mark i. 35). From this fundamental meaning the Sans. *aktú*, G. ἀκτίς "first beam of morning," were developed. In the primeval period therefore, on my view, there were two stages of "gradation" (*Ablaut*) of this stem side by side: *noqt-* for the black night, *nqt* for the end of the night, so that we here have an

*Attempts have recently been made to connect Goth. *dags* with Sans. *dhan* (cf. Bugge, *B. B.*, xiv. 72; J. Schmidt, *Pluralbildungen*, p. 151). In that case the relation of Sans. *açru*, "tear": Goth. *tagr*, is analogous.

instructive example of the genesis of a gradually developing "contradiction of meaning" (night-day). In exactly the same way, it would seem, Germ. *morgen*, Goth. *maúrgjus* must be connected with O.S. *mrŭknąti*, "become dark" (Lesser Russ. *mrôk*, "twilight"), and Germ. *dämmerung* with Sans. *támas*, "darkness" (Kluge, *Et. W.*, s.v.).

In their names for evening the Indo-Germanic languages differ. Sans. *doshā*, "evening, darkness," and Zend *daosha* (: Sans. *dush*, "become bad;" *cf.* G. ὁλοὴ νύξ, *Od.*, xi. 19) correspond, as do G. ἑσπέρα and Lat. *vesper*, O.S. *večerŭ* and Lith. *wākaras*. The last two equations appear to be connected with each other, and with O.I. *fescor* (borrowed from *vesper*?) and Armen. *gišer*, although their phonetic relation has not yet been explained.

The Teutonic, O.H.G. *âband*, A.S. *æfen*, O.N. *aptann* (Goth. *sagqs*, "sinking of the sun") are wrapt in complete obscurity.

In Greek the late afternoon, inclining to evening, was designated by δείλη (Homer: ἠώς, μέσον ἦμαρ, δείλη). As the day begins with the evening for the Greek, and afternoon is the end of the day, at the conclusion of which the sun reaches his "end" in a sense, one may conjecturally think of a connection between the hitherto unexplained δεί-λη (δεί-ελος) with the Teutonic *zied*, *zei-t*, *zei-le*. Aristarchus read in *Od.*, vii. 289, δείλετό τ' ἠέλιος (instead of δύσετο), which would then mean "the sun neared his end."

Of any further division of the day in the primeval period there is no indication whatever in language or in facts. And that cannot be regarded as unintelligible. At a time when the members of a community devote their lives mainly to one occupation, and that the very monotonous business of cattle-breeding, the need for an exact division of the day is obviously still far removed. The few terms that are formed are derived from the daily round, and are necessarily tied up with concepts, which at a higher stage of culture fall into speedy oblivion.

Such names for the times of day, corresponding to the primeval period's world of ideas, may be found possibly in: Sans. *sam-gavá*, "forenoon" = "the time when the cows are driven together," G. βου-λυτόν-δε = "the time when the cows are loosed," Sans. *sāyá* (: *sā*, "to bind"), "evening," and *abhipitvá*, "return home and evening," Lith. *piëtus* (: Sans. *pitú*, "food"), "mid-day," and others.

Finally, as we have in this chapter occasionally cast a glance at the culture of the Finns, for purposes of comparison, we may mention that in this family of languages also the names for the day, derived from the sun and the day-light, differ; whereas the names for night is the same in the East Finnish as in the Baltic Finnish (Ahlqvist, *loc. cit.*).

CHAPTER VII

FOOD AND DRINK.

Man and Beast—Flesh Diet—Vegetable Diet—Salt—Use of Milk in the Primeval Period—Mead—Beer amongst the Northern Indo-Europeans, Wine amongst the Southern—Sura and Soma amongst the Indo-Iranians.

An acute observer of human life (R. V. Ihering, *Gegenwart*, No. 37, 1882) has recently developed the idea with much ingenuity, that every usage with which custom has surrounded man's gratification of the animal needs of eating and drinking is due to the endeavour to conceal, or at least to disguise, the community of nature between man and the animals in this point. Undoubtedly, however, the feeling which is at the bottom of this endeavour is extremely modern. Primitive man feels that he is an animal with the animals, and the language of the Vedas still groups man and the animals together under the word *paçávas* : *paçú*, "cattle." Man is *dvipád paçúnám*, "the two-footed animal," by the side of the *catushpád*, "the four-footed," a mode of expression which (*cf.* Umbr. *dupursus*, "bipedibus," by the side of *peturpursus*) perhaps goes back to the primitive Indo-Germanic period. Accordingly, the original Indo-European language does not offer different expressions for the gratification of hunger (Sans. *ad*, "eat") and thirst (*pá*, *bibo*) in man and the animals, and it is only gradually that the individual languages develop special terms for the two, while even then they do not attain to such a sharp distinction as there is in German between *essen* and *fressen*, *trinken* and *saufen*."

However, the care which man bestows on the choice and preparation of his food and drink has always and everywhere afforded a just conclusion as to the degree of culture which he has attained. The *μέλας ζωμός* of the still semi-barbarous Spartan did not suit the taste of any Athenian of the time of Pericles, and the Graecised Roman of the empire turned up his nose at his boorish grandfather and great-grandfather, "whose words reeked of onions and leeks" (Varro, *ap. Nonium*, p. 201, 5). As, therefore, the way in which the physical needs of man are satisfied stands in a certain relation to the development of intellect and civilisation in a nation, it will be particularly interesting here to put together what can be ascertained by the aid of language and

the history of culture about the food of the prehistoric Indo-Europeans.

Whether animal or vegetable fare was the first food of man is a question which has often been discussed, and to which an answer can be given with no more certainty than to the question whether a preponderance of animal or vegetable food has the more favourable influence on the intellectual and physical development of a nation. The facts of ethnology (*cf.* Th. Waitz, *Anthropologie der Naturvölker*, p. 62, *f.*) appear rather to show that everywhere that food is best for a nation (as for the individual) which best corresponds to its organism as conditioned by climate and mode of life, and that intellectual advance can be found as well amongst vegetarian as amongst meat-eating peoples. Now, as on the one hand it is probable (*cf.* above, p. 301) that we have to look for the original Indo-Germanic home in a temperate climate, which points to an animal diet: while, on the other hand, we find that, even in prehistoric times, the transition from a pastoral life to a form, primitive certainly, of agriculture took place; a combined animal and vegetable diet therefore seems *a priori* probable for the primeval age.

The Indo-Europeans all make their appearance in history as meat-eating peoples, and only among the Hindus did animal food, as early as Vedic times, give way more and more to a milk and vegetable diet (*cf.* Zimmer, *Altind. Leben*, p. 268), obviously because of the climate. Two terms there are, however, which apparently go back to the original Indo-Germanic language. They are, first Sans. *kravya*, *kravis*, G. κρέας, Lat. *caro*, O.H.G. *hrêo*, words which originally, as the closely connected Lat. *cruor*, O.S. *krŭvĭ*, O.L. *cruĭ*, "blood," show, stood for the raw (O.H.G. *rô* from **hrô*) and bleeding meat; next, Sans. *mâṁsá*, Armen. *mis*, O. Pr. *mensa*, Lith. *mėsà*, O.S. *meso*, Goth. *mimz*,* possibly an original term for prepared meat. For that the elements of cookery were known to the Indo-Europeans will hardly be questioned. Nevertheless, the equation Sans. *pac* (Vedic "roast"), Zend *pac* (used of animal sacrifices), G. πέσσω, Lat. *coquo* (*coctile*, "brick," O.S. *peką*, Lith. *kepù*, Corn. *peber* (*pistor*), on which this opinion is based, originally only means roasting on a spit (Sans. *çûla*, G. ὀβελός). Compared with this mode of preparing meat, which seems to have specially appealed to the taste of the primitive age, boiling in water is a modern art, with which, for example, the Homeric Greeks were not yet acquainted (*cf.* Hermann, *Lehrbuch der Griechischen Antiquitäten*, iv. p. 228). *Hanc primo assam* ("roast"), *secundo elixam* ("seethed"), *tertio e jure uti coepisse, natura docet*, says Varro (*cf.* Hermann, *op. cit.*, p. 228). If, therefore, the root *pac* in the primitive age meant nothing more than "roast," then the Sans. *yûs*, *yûsha*, Lat. *jus*, Lith. *júszė*, O.S. *jucha*,

* Perhaps the obscure ἀνδρό-μεος (ψωμοὶ ἀνδρόμεοι, "morsels of human flesh") belongs here, and has taken the general meaning of "qui hominis est" —μεος from *μηος. *μησος would then be connected, first with Ved. acc. sing. *mâs* and Lith. *mėsà* (neither nasalised; *cf.* J. Schmidt, *K. Z.*, xxvi. 392, *f.*). *Cf.*, further, Lat. *membrum* from **memsrom*.

originally can only have meant the fat which exudes from the roasting meat, not broth in the proper sense. The marrow* of the bones, a favourite dish with all carnivorous savages (*cf.* Lubbock, *Prehistoric Times*, p. 216), may have been regarded as a special delicacy, as it still was by Homer (*Il.*, xxii. 501). But, if the Indo-European already knew how to use fire in the preparation of meat, still this does not exclude the coexistence of a taste for raw flesh (Sans. *âmâ*, G. ὠμός, L. *ômus*), a taste which, as is well known, modern civilisation has not wholly overcome. Of the ancient Germans, at any rate, this is expressly stated by Pomponius Mela (iii. 28). According to this writer our forefathers enjoyed their raw meat either fresh (*recens*), or when they had pounded it soft with their hands and feet. Indeed, even the first Viking law had to expressly forbid the eating of raw flesh. "Many men," it says, "still keep up the custom of wrapping raw meat up in their clothes, and of thus seething it, as they call it; but that is more like a wolf's way than a man's" (Weinhold, *Altn. Leben*, p. 148). Amongst the Hindus, however, only demons and magicians are regarded as *kravyâd*, "eaters of raw flesh;" but the Hindus of the Rigveda had already attained a much higher stage of development than the Germans, when in the threshold of history.

As regards the animals which served the original Indo-Europeans as food—naturally a pastoral people drew first on their herds (*neque multum frumento sed maximam parte lacte atque pecore* ("their herds") *vivunt*, says Cæsar, iv. 1, of the Suevi). To them would be added, though not often, the spoils of the chase, as was the case with the ancient Germans, according to Tacitus (*recens fera*). On the other hand, it is striking that only twice in Homer, and then in the *Odyssey*, are wild animals mentioned as food—wild-goats (ix. 154) and a deer (x. 157)—and both are occasions on which nothing else was to be had. In the Rigveda, where the hunting of wild animals is mentioned more than once, the use of the products of the chase as food appears to have been wholly unknown. So apparently in primitive times, men went hunting rather to destroy the dangerous enemies of herd and home than for the use they hoped to make of the booty (*cf.* above, p. 251).

An excellent clue to the animals used as food by the Indo-Europeans is afforded by the earliest information we can find as to the animals used as offerings (G. ἱερεία, "cattle for slaughter"). Thus, among the Hindus the horse, the ox, the sheep, and the goat are mentioned as victims; amongst the Greeks and Romans, oxen, sheep, goats, and pigs; though in ancient Italy it was regarded as sinful to kill and eat the plough-ox (*cf.* J. Marquardt, *Das Privatleben d. Römer*, p. 413). The sacrifice of horses, and the eating of horse-flesh implied thereby (Weinhold, *Altn. Leben*, p. 145), we, with V. Hehn (p. 48), regard as a custom which spread at a relatively late date through the northern peoples owing to Persian influence (W. Geiger, *Ostiran. Cultur*, p. 469). Birds are entirely excluded from offerings in the more ancient history of the

* Sans. *majjâ*, Zend *mazga*, O.S. *mozgŭ*, O.H.G. *marg*.

Indo-European peoples, a fresh proof that birds were not known in the primeval age. That fish were unknown as food in the primeval age we have already amply explained elsewhere (*cf.* above, p. 116).

As vegetable, in addition to animal, food, the earliest period knew wild fruits (*agrestia poma*, Tac., *Germ.*, c. 23). These names, which are etymologically identical, have been given above (p. 275, *f.*), and we must add to them, it can hardly be doubted, the acorn (Lat. *glāns*, G. βάλανος, O.S. *žludĭ*, Armen. *jałin*). At any rate, the Arcadians in their low stage of development are expressly called βαλανηφάγοι, "acorn-eaters," and Pliny is aware (xvi. 2. 6) that occasionally in times of famine a bread is made out of the meal of acorns (*cf.* Helbig, *Die Italiker in der Poebene*, p. 72, *f.*).

As agriculture spread, cereals came more and more to rank among the necessaries of life. Not unfrequently in Indo-Germanic languages corn or some one species of grain is called food or the means of life, κατ' ἐξοχήν. Thus, O.S. *žito* belongs to *žiti*, "to live," O.I. *áśu*, "corn" (G. *σῖτ-αρα*, "husk, bran"): O.I. *áśnāmi*, "eat," O.S. *pĭtati*, Eng. *oat* (**aid-*, **oit-*): G. *εἶδ-αρ*,* "food." *Cf.* also Lat. *pĭtŭlum* = O.H.G. *fuo tar* (**pi-tlero*) : *πα-τέομαι*, "eat," &c. The corn, having been cut with a sickle-shaped knife (*ἅρπη* = O.S. *srĭpŭ*), was trodden out by the ox, and roughly separated from the chaff. The grain thus obtained was either roasted (Sans. *tharjj* = G. *φρύγω*, Lat. *frīgo*), and then eaten, or was ground (*molere*) in a primitive hand-mill, consisting of two blocks of stone, or rather crushed in stone mortars (*πτίσσω*, Lat. *pinso* : *cf. pistor*, "baker," Sans. *pish*); the meal thus produced was kneaded into a doughy mass and then baked. Preparations of this kind were the *karambhā* of the Hindus; the *μᾶζα*, the every day food of the Greeks; the *πόλτος* = *puls* of the Greeks and Italians (*cf.* K. F. Hermann, *Privataltertümer*, p. 214, *f.*; J. Marquardt, *Das Privatleben der Römer*, p. 398; Zimmer, *Altind. Leben*, p. 268, *f.*).

Though we cannot say that bread, in the proper sense, was made in the primeval age, as even the ancients knew perfectly well (*cf.* Marquardt, *op. cit.*, p. 399), yet the elements of this art are of a high antiquity. Certain expressions in the Pamir dialects† show that in Persia originally cakes of dough were buried under the hot ashes and thus baked or roasted (*cf.* also G. *φόργω*, "roast" = A.S. *bacan*, "bake," Lat. *focus*, "hearth"). Possibly it was a bread of this kind which was designated by the equation, Lat. *lībum* (**cleibho*) = Goth. *hlaifs* (**cloibho*). O.S. *chlĕbŭ* and Lith. *klëpas* are loan-words.‡ *Cf.* also G. *πλάθανον* : O.H.G. *fladu*, "sacrificial cakes."

* *Cf.* Pliny, *Hist. Nat.*, xviii. 17. 44: "Quippe quum Germaniæ populi serant eam (avenam) *nec aliud pulte vivant.*"

† Mingānī *naghan*, "bread," from *ni* and *kan*, "dig" (properly "the cakes buried under the hot ashes and baked"), Beloochee *naghan*, Armen. *nanuk* (cf. Lagarde, *Armen. Stud.*, p. 113), Pers. *nān*, &c., occurring all over West Asia (Tomaschek, *Pamir D.*, p. 63).

‡ Kozlovsky has recently given a different account (*Archiv f. slav. Spr.*, xi. 3, 360).

It has been supposed that the Indo-Europeans of the oldest period were not acquainted with the condiment salt (*ἀνέρες οἵδε ἅλεσσι μεμιγμένον εἶδαρ ἔδουσι*, *Od.*, xi. 122), as neither were the ancient Epirotes (Paus., i. 12) nor the Numidians, who lived principally on milk and the produce of the chase, and were not acquainted with salt or with anything else to tickle the palate (Sall., *Jug.*, 89). This is taken to be proved by the facts, first, that the etymologically-equivalent names for salt are confined to Europe* (*cf.* above, p. 40, *f.*), G. ἅλς, Lat. *sal*, *saltere* = **sald-ere*, Goth. *salt*, O.S. *solt*, O.I. *salann*; next, that this mineral, which seems so indispensable to us, was unknown even by name, as well to the most ancient Persians (*cf.* W. Geiger, *Ostiran. Cultur*, p. 149) as to the Hindus of the Rigveda (*cf.* Zimmer, *Altind. Leben*, p. 51). It is in the Atharvaveda that the term *lavaṇá*, "the moist" (see salt), first occurs. In the oldest prose salt is called *sáindhavá*, "from the Indus."

On the other hand, J. Schmidt (*Die Pluralbildungen der idg. Neutra*, p. 182, *f.*) has recently shown that the Indo-Germanic names for salt go back to a primitive paradigm *sâl*, *saln-ás*, and since a change of stem, such as occurs between the nom. **sôl-d*, **sal-i* (Lat. *sale*), and the gen. **sln-és*, elsewhere occurs only in letters which come down from the original language, the existence of the word in the primitive period is very probable, in spite of its absence from the Indo-Iranian languages, which would have lost the word in the same way as Lithuanian has. Under these circumstances we leave the question whether salt was known to the Indo-Europeans before the dispersion, or did not become known until European times, open for the present, especially as we shall return to it in another connection (ch. xiv.).

We may, however, remark here that the same name for salt as in Indo-Germanic recurs amongst the Finnic-Ugrian peoples over a tremendous area (Finn *suola*, Weps. *sola*, Mordw. *sal*, &c.), and the question as to the historical relation of a correspondence such as this requires investigation (*cf.* Ahlqvist, p. 54).

When the Indo-Europeans, while they were still, all or most of them, closely connected, made their first acquaintance with salt, they may particularly have used it as did Patroclus in the *Iliad* (ix. 212), to sprinkle and spice the meat roasted on the spit. Associated with the gifts of Ceres, the θεῖος ἅλς (*cf.* the *mola salsa* of Numa) soon became a favourite offering to the immortals.

Passing to what the Indo-Europeans drank, we will first speak of milk and the way it was used in the primeval age. Names for milk (given above, p. 124), etymologically equivalent, do not extend beyond groups of languages; only one equation (O.Pr. *dada-n* = Sans. *dádhi*) connects Europe and Asia. Again, it is remarkable that the idea of milking found different expression in the European languages, (ἀμέλγω, Lat. *mulgeo*, L. *bligim* (*mligim*), O.H.G. *milchu*, O.S. *mlĭzą*) and the Asiatic (*duh*). Nevertheless it will not be doubted that the Indo-Europeans, who all appear in history as γαλακτοτροφοῦντες as early as the primeval age, used for food the

* The Armenian alone (*al*) agrees, here again, with the European languages.

milk of their herds, their cows, sheep, and goats (in individual cases—as, indeed, among the Persians of the Avesta: W. Geiger, *Ostiran. Cultur*, p. 228—their mares). For other uses of milk two equations seem of importance: first, Sans. *sâra*, "curdled milk," G. ὀρός, Lat. *serum*, "whey," O.S. *syrŭ*, "cheese," Lith. *sûris*; next, Sans. *añjana*, Lat. *unguentum*, "ointment," O.H.G. *ancho*, *anco*, Alem. *anke*, "butter" (J. Grimm, *Geschichte d. D. Spr.*, p. 1003), I. *imb* (from **ing*), "butter;" by the side of which we may place Sans. *sarpis*, "butter," G. Cypr. ἔλφος, "butter," ἔλπος· ἔλαιον, στέαρ, Hesych. (J. Schmidt), Alb. *gjalpe*, "butter" (G. Meyer, *B. B.*, viii.). The question is—What are we to understand that these equations represent in the primeval period?

The most primitive mode of making cheese is that of the Turko-Tataric tribes, the so-called *ḳurut*, "a method of curdling milk which has turned and is coagulated: this is dried in the sun, in the form of small round cakes, and is generally used on long journeys: powdered and soaked, the *ḳurut* produces a kind of *Airan* = sour milk" (H. Vámbéry). Now, this mode of making cheese seems as a matter of fact to have prevailed amongst the Teutons into historic times. In conflict with Cæsar's statement (vi. 22) that *câseus*—but what does he understand by this word as applied to the barbarians?—was a Teutonic food, Tacitus (*Germ.*, c. 23) speaks only of "lac concretum," "coagulated milk;" and Pliny (*Hist. Nat.*, xi. 41. 96) says expressly: "Mirum barbaras gentes quæ lacte vivant ignorare aut spernere tot sæculis casei dotem, densantes id alioqui in acorem iucundum et pingue butyrum." Further, the only genuine Teutonic designation for cheese, O.N. *ostr* (Finn *ju-usto*, "cheese"), as belonging to Lat. *jûs*, "broth" (*cf.* above, p. 315), points to a liquid mess, to precisely the sour milk made out of the *ḳurut*.

Even in the Rigveda only a skin of sour milk, not cheese in the proper sense, is mentioned (Zimmer, *Altind. Leben*, p. 227); and in the Avesta, too, *payôfshûta*: *payaṅh*, "milk," = Pamir D. *pâi*, *pâi*, *poi*, "curdled milk," "curds," can very well be understood of *lac concretum*.

A glance into the Homeric dairy is afforded by the Cyclop's cave (*Od.*, ix.). Cheese is here called τῡρός, a word which cannot be explained, at any rate has not yet been explained, by anything in Indo-Germanic. Under these circumstances it is perhaps not too bold to see in this word an early intruder from the languages of the North Pontine Scyths, and to derive τῦρός from the Turko-Tataric *turaḳ*, Magy. *turó*, "cheese," which has also found its way into Slavonic (O.S. *tvarogŭ*; Vámbéry, *loc. cit.*, p. 94; Miklosich, *Et. W.*). Perhaps Pliny (*Hist. Nat.*, xxviii. 9) regarded the compound βού-τυρον as a Scythian word. The Lat. *câseus* is a quite obscure word, which made its way at an early period into the Teutonic languages (O.H.G. *châsi*, A.S. *čŷse*; *cf.* also I. *caise*), along with an improved method of making cheese.

The above equations seem to indicate that even in the primitive period men already knew how to disengage the fatty constituents of milk, not indeed for the purpose of eating them, but for smearing

(Sans. *lip*, G. ἀλοιφή = O.S. *prilepŭ*, "ointment") the hair and anointing the body. For this use of butter, as well as of animal fat, I may refer to V. Hehn's remarks, p. 138, *ff.*, as regards the facts, and for the philology to the transitions, cited, from the meaning of butter to ointment. To them may be added O.S. *maslo*, "butter" and "ointment" (*mazĭ*, "ointment," *mazati*, "to smear" : G. *με-μαγμένη*, *μαγεύς*, &c.), and O.H.G. *seifa*, A.S. *sâpe*, "the soap originally used by the northern peoples to colour the hair" = Lat. *sebum** (**sæ-bum*), "fat, tallow." The southern peoples therefore, the Greeks and Romans, brought their predilection for anointing the body down with them from the primeval period, except that amongst them the more worthy oil and precious foreign spices early drove out the primeval use of grease and fat. Though here, too, the primeval period has left evident traces behind it. An ancient word for ointment in Greek is *μύρον*. There can be no doubt that this, to begin with, belongs to the Hebr. *môr*, Aram. *murrâh*, "sap of the Arabian myrrh," from which it is borrowed. But the Greek expression also occurs with initial σ (*σμύρον*), which finds no support in the Semitic languages. I assume, therefore, that in Greek two different elements have been amalgamated, a Phenico-Semitic and a native element; and that in Greek there existed from ancient times a *σμύρον* or **σμέρον*, "ointment," "grease," which correspond to O.H.G. *smero*, "fat, grease," Goth. *smairyr*, "fat," O.N. *smjör*, I. *smir*, "marrow." But, whereas, the northern† peoples and the Indo-Iranians (Sans. *ghṛtá*, Zend *raoghna*, "butter," Parsee *raogan*, Pers. *rôghan*, Pamir. D. *rúghu*, *rôghún*, &c.) carried the primitive process to butter-making in the proper sense, the Greeks and Romans having become acquainted with the Semitic olive-tree and its fruit entirely gave it up.

In any case we have to conceive the preparation of milk in the primeval age as standing at a very low level; for, as a glance at neighbouring peoples is enough to show, the manufacture of butter and cheese is too elaborate and lengthy a process for wandering nomads; and even for anointing they prefer to use the fat of sheep, pigs, and horses. Thus, the Finnic word for "butter," *voi*, really means fat, and the names given to cheese in the languages of this people are nothing but loan-words from German or Slavonic (*cf.* Ahlqvist, *op. cit.*, p. 5, *f.*).

Only, the mild refreshment of milk by no means sufficed to slake the thirst of our prehistoric ancestors. We find that most peoples, even the most primitive savages, endeavour by manufacturing an intoxicating drink from roots, herbs, flowers, &c., to procure a short respite from earthly cares; and our Indo-European forefathers cannot have failed to discover the poetry of intoxication. Indeed it is not improbable that the national vice of drunkenness,

* On Lat. *sâpo*, *cf.* author's *Handelsgeschichte u. Warenkunde*, i. 88.

† Another pan-Teutonic expression for the making of butter is O.N. *kirna*, Eng. *churn*, A.S. *cyrnan*, M.H.G. *kernen*, "to butter," of unknown origin. O.H.G. *outera*, &c., does not occur before the tenth century (Kluge, *Et. W.*, s.v.).

which Tacitus found existing among the ancient Germans, may have been a bequest from prehistoric times (*cf.* W. Geiger, *Ostiran. Kultur*, p. 229). The drink with which the primeval age intoxicated itself was mead: Sans. *mádhu*, "sweetness, sweet drink and food, mead," later, also, "honey" Zend *madhu*, "sweet drink" (perhaps the *hauma*: W. Geiger, p. 23); G. *μέθυ*, "wine" (*cf.* *μέθη*, "drunkenness"), O.H.G. *metu*, O.S. *medŭ*, "honey, wine," Lith. *midùs*, "mead," *medùs*, "honey" (Kurschat), O.I. *mid*, "mead" (*mesce* = **medce*, "ebrietas"). The meaning "honey," which this series of words may take in numerous languages, and the idea of drunkenness developed from it by these peoples, shows that we have here to do with an intoxicating drink of which the most essential constituent must have been honey. The fundamental Indo-Germanic form of this stock of words is **médhu*, for which a root can only be found in Indo-Germanic if we assume that by the side of the *medh*, to which **medhu* takes us back, there was also a *med*, which then corresponds to Sans. *mad*, "enjoy oneself," *muda*, "intoxication." Special terms for honey* (G. *μέλι*, *βλίττω*, "to take the honey," Lat. *mel*, Goth. *milip*, O.I. *mil*, Armen. *melr*), for wax (G. *κηρός*, Lat. *cēra*, Lith. *kóris*; O.S. *voskŭ*, Lith., *waszkas*, O.H.G. *wahs*), and for the bee (O.S. *čapŭ* = G. *κηφήν*; O.H.G. *trëno* = G. *τεν-θρήνη*, *τεν-θρηδών*, Lac. *θρῆνυς*; O.H.G. *bini*: Lith. *bitis*, O.I. *bech*; O.H.G. *imbi*: Lat. *apis*?) are first to be found in the language of the European group of peoples, whose abode we must conceive as in a woody country (ch. iv.); where they came across bees and wild-honey. The undivided Indo-Europeans may have got the honey necessary for their **medhu* from neighbouring peoples in the way of commerce (ch. x.). Possibly also the word?

In striking proximity, phonetically, to the Indo-Germanic is the common Finnic-Ugrian term for honey: Esth. *mesi*, Wot. and Weps. *mezi*, Liv. *mož*, Mordv. *med*, Tscher. *mü*, Syrj. *ma*, Ostj. *mavi*—a stock which does not seem to be due to borrowing from any one single Indo-Germanic language (*cf.* Ahlqvist, *loc. cit.*, p. 43; Tomaschek, *Ausland*, 1883, p. 703). In the present condition of our knowledge one dare not conjecture more than this. As the Indo-Europeans gradually advanced to agricultural life and to permanent habitations, mead (which held its place longest in the abodes of the Slavonic peoples, which are admirably adapted for agriculture) was more and more driven into the background by more elaborate drinks, amongst the undivided Indo-Iranians by *soma* (Zend *haoma*) and *sura* (Zend *hura*), amongst the Europeans by beer and wine.

Amongst the northern nations of Europe beer, the brown-coloured, goes far back into prehistoric times, and Greek and Roman writers have transmitted to us many barbarous names for it. Thus the Thracian *βρῦτον*, Pæonian *παραβίη* (Hecat., fr. 123 M.), the Illyrian *sabaja*, Celtic *κόρμα* (= I. *cuirm*), &c. The

* I think we may assume a second European expression for honey in O.H.G. *seim*: G. *αἰμύλιος*, "honey-sweet" (*K. Z.*, xxx. 463).

history of this subject has been treated by V. Hehn with his accustomed mastery. Only as regards the Teutons sundry errors made by this scholar require explaining. In spite of the information given us by Tacitus (*Germ.*, 23: "Potui humor ex hordeo aut frumento in quandam similitudinem vini corruptus"), V. Hehn regards the enjoyment of beer as relatively recent amongst the Teutons, and borrowed from the Celts. Here he adopts the views put forward by J. Grimm and Wackernagel, according to which the German *bier* is borrowed from the M. Lat. *bibere*, and the North Teutonic *als* from the Lat. *oleum* also. I need hardly point out that at the present day there is hardly a student of language who accepts such an explanation.

The primitive Teutonic O.H.G. *bior*, A.S. *beór*, O.N. *bjórr* is, according to R. Kögel's attractive interpretation, to be explained as "barley-juice:" A.S. *beó*, O.N. *bygg*, "barley, grain." The fundamental Teutonic form of the latter is **bevo*, with which the above-named Thraco-Pæonic (παρα) βί(F)η seems as though it could be combined. So, too, perhaps, the ancient Gallic *brace* (Pliny, *Hist. Nat.*, 18. 7. 11), "spelt," "malt," "beer" (Russ. *braga*, "drink of barley and millet"), is to be connected with the previously mentioned equation, Lat. *far*, "spelt" (pp. 284, 293); and in the case of the ancient Gallic, κόρ-μα, Span. *cer-ea* (Pliny, 22. 25. 82), *cervesia*, *cervisia*, we have obviously to start from a primitive *cer-*, "barley," which seems to be the base of the G. κρι-θή also (*cf.* above, p. 292).

The North Teutonic, O.N. *öl*, A.S. *ealu*, however, go back to an old *t*-stem **alut* (A.S. *ealoð*, *ealeða*), which also appears in the Finn. *olut*, and excludes all idea of borrowing from *oleum*. This also makes it probable that the Lith. *alùs*, "beer," O. Pr. *alu*, "mead," O.S. *olŭ* are loans from the Teutonic, from which again come the O.S. *mlato*, Finn. *mallas* (O.H.G. *malz*, O.N. *malt*, A.S. *mealt*).

A likely interpretation of **alut-*, as well as of **mald-*, is yet to be found. The expression for brewing, again (O.H.G. *briuwan*, O.N. *brugga*, A.S. *breóvan*), is pan-Teutonic. With it the above-mentioned Thracian βρῦτον may perhaps be attached. Finally, a joint name for dregs (O. Pr. *dragios*, O.S. *drozdije*, O.N. *dregg*: J. Schmidt, *Verwandtschaftsverhält.*, p. 37) unites the Lithuanians, Teutons, and Slavs.*

The Indo-Europeans of the north of Europe then at an early period made the acquaintance of beer in addition to the primitive drink of mead. In the meantime, however, the people of the south of Europe had come into possession of a cultivated plant which was destined to be of incalculable importance, first for their own national life, and then for that of the rest of Europe—the *vitis vinifera*, the vine.

* A Teutonic word, as yet unexplained, for some kind of drink (cider, &c.), and which is also translated by *poculum*, *fiala*, &c., is O.H.G. *ità*, A.S. *ità*, Goth. *leiþu* (*cf.* Schade, *Ahd. W.*). I compare G. ἄ-λειτ-ον (from *ἀ-λειτ-jο-ν), "beaker." *Cf.* also Zend *raêtu*, "fluidity."

Touching the acquaintance of the Indo-Europeans with wine, two conflicting opinions have been held up to the present time. According to one the European names for wine, Lat. *vinum*, &c., are primevally related both to each other and to the Sans. *vênâs*, "dear," an epithet of the *soma* drink deified by the Indians. According to this, wine was known in the primeval Indo-Germanic period. The principal representatives of this hypothesis are A. Kuhn and A. Pictet, the author of *Origines Indoeuropéennes*.

According to the other view the European words collectively are to be derived ultimately from the Semitic, Æthiop. *wain*, Hebr. *jaʿin*, &c., from which it would follow that the Indo-Europeans had to thank the Semites for their acquaintance, directly or indirectly, with wine and the vine. This is the view of V. Hehn amongst others.

Now, I believe, that neither the one view of the subject nor the other accounts for all the facts of the case, linguistic and historic; and I will therefore venture to put forward a third theory with regard to this subject, important as it is for the whole history of culture. It may in a sense be termed a compromise between the two already mentioned views.

It is necessary to point out in the first place that in the case of the North European names for wine, O.I. *fín*, Goth. *vein*, O.S. *vino*, there is certainly no phonetic test to compel us to regard them as borrowed from the Lat. *vinum*. As, however, historical and other evidence suffices to demonstrate the gradual spread of wine from the south to the north of our quarter of the globe, I share the opinion of all philologists that the above-mentioned North European names for wine are actually due to borrowing from the south, and also that the Celtic* *fín* comes from the Lat. *vinum*, as does also the Teutonic† *vein* from which again Slav. *vino* comes.

Things are quite different the moment we turn to the Balkan and Apennine peninsulas. We never here discover an age which presumes ignorance of the *vitis vinifera*. The Homeric poems in their oldest portions display perfect familiarity with the wine and its use. The stem οἶνο- is employed with extreme frequency to form proper names (place names and names of persons). Above all no one has answered the question how the initial F of Fοῖνος can be explained out of the *j* of the Hebr. *jaʿin*; for it is to this word, and not to the Arab and Æthiopian *wain*, that we must look on the assumption that the G. Fοῖνος is a loan from the Semitic. Indeed, the Semitic forms themselves cannot be provided with a satisfactory root from the Semitic family of languages (A. Müller, *B. B.*, i. 294).

* In *Liv.*, v. 33, *ff.*, it is an essential part of the Celtic migration-myth that it was the wine imported from Italy to them that induced them to invade the promised land.

† *Cf.* also O.H.G. *windemôn* from Lat. *vindemiâre*, O.H.G. *lûrwein* from Lat. *lôra*, *most* from Lat. *mustum*, *behhari* from Lat. **bicarium*, *chelih* from Lat. *calix*, *lâgella* from M. Lat. *lagellum*, *calcatura*, "wine-press," from Lat. *calcatûra*, *pressôn* from Lat. *pressa*, *torcul* from Lat. *torculum* (Franz, *Lat. Rom. Elem. im Ahd.*, p. 72.)

In Italy the Lat. *vîno* has spread through all dialects. Cf. Umbr. *vinu*, Osc. *Viinikiis* = *Vinicius*, Volsc. *vinu*. The vine itself has been certainly traced in the lake-dwellings of the Po long before any Greek immigrations (Helbig, *loc. cit.*, p. 18); and though in ancient sacrificial ritual offerings are made of milk and not of wine (Hehn, p. 65), this only shows the priority of milk as a drink, which is indisputable in our view also.

While, then, the assumption that it was through the Greeks that wine became known to the Italians is not required on any grounds whatever drawn from the history of culture, it is from the point of view of language by no means admissible. On the contrary, the idea that Lat. *vînum* is a loan-word from the G. Fοῖνος is opposed by most serious phonetic difficulties, on which O. Weise (*Die Griech. W. im Lat.*, p. 127) has rightly insisted.

Vî-num (from **vî-no* or **vcî-no*) rather attaches itself to *vî-tis*, *vî-men*, *vî-tex*, and—exactly like the G. Fοῖνος—to the Indo-G. root *vei*, "to twine," so that *vî-no* means first "creeper," then "fruit of the creeper," finally "drink made from the fruit of the creeper." What V. Hehn (p. 467) alleges against the possibility of this development of meaning is shipwrecked by G. οἴνη, which in Hesiod means "vine," but in later language = οἶνος.*

But if we are on the one hand warranted in thinking that the equation *vînum* = Fοῖνος is due to primeval affinity, yet on the other we share the suspicions expressed by V. Hehn against the assumption that wine was used in any prehistoric epoch of the Indo-European peoples. We, too, are of opinion that the cultivation of the vine implies a stage of settled life which it is impossible to ascribe to the Indo-Europeans with the semi-nomad habits which they had not only in prehistoric but in the earliest historic times. Under these circumstances there seems to me to be only one possibility logically left open: the Greeks and Italians must have made the acquaintance of the vine in its wild state, and therefore in its original home.

On closer inspection we find that the equation *vînum* = Fοῖνος is not confined to the Greeks and Italians, but is shared by all the peoples that have or had their roots in the north of the Balkan Peninsula. This holds of Albanian, the last linguistic remains of Illyrian, where the vine is called *venę*, *verę*, a word which is not due to borrowing from the Latin (G. Meyer, *Alb. Gr.*, p. 104; Gröber, *Grundriss d. rom. Phil.*, i. 810); it holds, further, of the Armenian *gini* (= **vini*; Hübschmann, *A. Stud.*, p. 25); and the ancients (Hdt., vii. 73, and Eudoxus *ap.* Eustath.; *cf.* Zeuss, *Die Deutschen und die Nachbarst.*, p. 259) expressly assume that the Armenians were akin to the Phrygians, who again are designated ἄποικοι τῶν Θρᾳκῶν (*cf.* ch. xiv.) Here belongs, too, the Thracian γάνος (*Suid.*, i. 1. 1071) probably, if we may venture to regard it as an error in writing for *γίνος (*Fίνος).

* *Cf.* further in Hesych. ὑιήν, ὑιόν (Fι-j-ή, Fι-j-ό) · τὴν ἄμπελον and ὑιόν (Fι-j-ό) · ἀναδενδράδα (wild vine).

Again, a second designation for wine, and for unmixed wine, seems to cling to the north of the Balkan Peninsula, *i.e.*, the G. γάλυς (first in Archilochus, Bergk, fr. 78), with which are connected: Macedonian κάλιθος, Thracian ζίλαι (*Orient. u. Occid.*, ii. 721), and P. de Lagarde, *Ges. Abh.*, p. 279), and possibly a Sabine **jalo*, "wine," which may be inferred from the Lat. *Falernus ager*,[1] the land of wine famed in antiquity (author, *K. Z.*, xxx. 484).

Like language, tradition also carries us to the districts north of Hellas proper as the starting-point of the ancient cultivation of the vine. In the earliest times (*Il.*, ix. 72; *Od.*, ix. 196) Thrace is designated as the principal place for the export of wine; and, according to the tradition of the ancients, the cult of Dionysus was spread over the whole of the north of the Balkan Peninsula, even amongst the wildest Thracian tribes.

Finally, on the question of the original home of the vine we can appeal to the unprejudiced investigations of natural science. It is A. Grisebach, perhaps the greatest authority on the geography of plants, who in his work, *Die Vegetation der Erde*, i. 323—certainly without any reference to historic research by means of philology, for his aversion to it is well known—expressly designates the dense forests of the Pontus and Thrace up to the Danube, a district particularly rich in creeping plants, as the original home of the *vitis vinifera*. However, I adduce this argument last because I am well aware that other distinguished naturalists regard the vine as indigenous to other districts, especially to the south of the Caucasus, between the Caucasus and the Black Sea, or between the Caucasus and the Hindu Kush (*cf.* De Candolle, *Kulturpflanzen*, p. 236, *ff*, and Ferd. Cohn, *Die Pflanze*, p. 298); and because, as far as I can see, no conclusive argument has been produced by naturalists in favour of the one argument or the other. But, apart from this, the facts given above entitle us, I believe, to draw the following conclusions:—

The Greeks and Italians made the acquaintance of the vine in a prehistoric epoch in which they still dwelt along with the peoples of the northern Balkans, the Illyrians, Thracians, Macedonians, and the Armenians, who subsequently migrated to Asia. They designated it by a formation in *-no-* from the root *vei*, "to twine" (**voi-no*, **yei-nó*), which root occurs amongst the other Indo-Europeans as well. The scene of this is probably to be placed to the north of the Balkan Peninsula, where the cult of Dionysus is testified to from the oldest times. As the Greeks and Italians gradually separated from their brother-nations, and left them in the north, the vine (from the grape of which a finer drink was continually produced, as life became more settled and fixed) may have spread further and further over the Balkan and Apennine peninsulas, following the footsteps of the groups of tribes which still held together. In these peninsulas it was found on the one

[1] W. Deecke (*Die Falisker*, p. 22, *ff*., Strassburg, 1888) interprets the names *Falerii* and *Falisci* as dwellers in towers or on pile-buildings (Lat. *fala*, "wooden scaffolding").

hand by the Phenician traders, on the other by the Greek colonists; though they doubtless were able to instruct the natives on many points in the cultivation of the plant and the preparation of the drink.)

When and where the Semites first came in contact with the vine; what is the relation of Hebr. *ja'in* : Arab. and Æthiop. *wain*—a stock of words in which Assyrian and Babylonian have no share*—what was the relation of the primeval Egyptian viticulture to the Semitic—these and others are open questions, to answer which is beyond the limits of this book (*cf.* F. Hommel, above, p. 98).

We have now to dwell for a few words on the two already mentioned drinks which the Indo-Iranian peoples share, the *sûrâ* (*hâtra*) and *sôma* (*haoma*). As to the composition of the former we know nothing. The St Petersburg Dictionary gives as the meaning "divine drink," "brandy." It is noteworthy that both the Tataric and the East Finnish languages have a term for beer with a very similar sound: Wog. *sara*, Wotj. and Syrj. *sur*, Ung. *sör*, Tscher. *sra*, Tatar. *sra* (Ahlqvist, p. 51).

Touching the soma—which is conceived by both peoples, not only as a drink but also as a god who grants to both peoples abundance of wealth and posterity, and is most intimately connected with the cults of both peoples (Spiegel, *Die Arische Periode*, p. 168, *ff.*)—careful botanic researches have been made at the instigation particularly of R. Roth (*Z. d. D. M. G.*, xxxv. 680–92) on the mountains of the Hindu-Kush and in the valleys of the Oxus by both Russians and Englishmen for the representative on earth of the divine soma plant (*yam brâhmânâh vidur*, "which the priests know"), but for which the modern Hindus and Parsees use various substitutes. It was hoped that in this way a safe datum might be obtained for the question as to the original Indo-Iranian home. Unfortunately, however, all the investigations as yet undertaken have failed to produce any tangible result (*cf.* on this, Max Müller, *Biographies of Words and the Home of the Aryas*, p. 222, *ff.*)

* Assyr. *inu*, "wine," according to a communication from F. Hommel, is only established in the late national lexicons, and is certainly a loan-word from Aramaic-Hebrew. Wine in Assyrian is *karânu* (G. κάρηνον). The Semitic *karmu*, "vineyard," *gapnu*, "vine," *'inabu*, "grape," still have the general meanings of "arable-land," "stock," "fruit," in Assyrian and Babylonian (*cf.* F. Hommel, *Die Sprachgeschichtl. Stellung des Babylonisch-Assyrischen*).

CHAPTER VIII.

CLOTHING.

Clothing of Skins—The *Renones*—Tanning and Plaiting—Terminology of Weaving and Spinning—The Materials for these two Arts—Comparison of the Teutonic Dress according to Tacitus with that of the Greeks according to Homer—Tattooing—Ornaments.

THAT the Indo-Europeans even before their dispersion, wherever their home may have been, no longer went about in paradisaical nudity, is shown by the root *ves*, "to clothe," which runs through nearly all the languages of our family of speech, and has given birth to numerous terms for clothes and clothing oneself in those languages (Sans. *vásman*, *vásana*, *vástra*, *vásána*, Zend *vaṅh*, *vaṅhana*, *vastra*, G. ἕννυμι, εἷμα, ἐσθής, Lat. *vestis*, *vestio*, Goth. *gavasjan*, &c.). The opposite conception of nudity is designated by the equation: Sans. *nagná*, O.S. *nagū*, Lith. *nugas*, Lat. *nūdus* (**nogv-ido*), Goth. *naqaþs*, O.I. *nocht*.

That a cattle-breeding people such as the Indo-Europeans were did not fail to utilise the skins of their slaughtered cattle, and of the wild animals they killed in the chase, is readily understood, and is expressly testified, as regards the northern Indo-Europeans, the Britons, and Teutons, by Cæsar (*B. G.*, v. 14, vi. 21) and Tacitus (*Germ.*, c. 17). The Goths had become so habituated to this clothing of hides that no sooner did they get back from the Roman court, where they did not dare to appear in their national garb, than they once more wrapped themselves in their sheep-skins (αὖθις ἐν τοῖς κωδίοις εἰσί; Beckmann, *Beitr. Z. G. d. Erf.*, v. 1. 26). The clothing of sheep-skins thus expressly testified to in the case of the Goths can be traced back to the earliest recorded Teutonic times. In agreement with Cæsar ("Germani . . . . . pellibus aut parvis renonum tegimentis utuntur"), Sallust puts down the *renones* as the national garb of the Teutons ("Germani intutum renonibus corpus tegunt" and "vestes de pellibus renones vocantur"). That this word has nothing to do with O.N. *hreinn*, "reindeer," is well known. I take *renones* to be for **vren-ōn-es*—for the initial *vr*, scarcely pronounceable to Latin lips, may or must have been simplified to *r*—and identify it with G. *vren* in πολύρρηνες, Sans. *úraṇa* and *vṛn-* in ἀρήν, ἀρνός, ἀρνειός. In Greece, too, sheep-skins were called ἀρνακίδες.*

* A stem **vren-en* is also indicated by G. ἀρν-ά-σι.

For in Greece, too, tribes left behind by the advance of culture, and the lower strata of society, long remained faithful to the original dress of hides. Thus in Phocis and Euboea garments of pig-skin continued to be worn (Paus., viii. 1. 5); the Ozolian Locri wrapped themselves in untanned hides (Paus. x. 38. 3); herdsmen, helots, and slaves wore the so-called διφθέρα (J. Müller, *Privatalterth.*, p. 396).

Language, too, offers numerous pieces of evidence for the presence of the original dress of skins: Goth. *snaga*, "garment," is compared with much probability by A. Bezzenberger with G. ῥικος, "fleece" (κατω-νάκη, "a slave's garment"); the Teutonic stock, Goth. *paida* (*ga-paidôn*, ἐνδύειν), O.H.G. *pheit*, O.S. *pẽda*, agrees exactly with G. βαίτη, "garment of goat-skin;" the G. σί-συ-ς, σι-σύ-ρα, "ἡ ἀπὸ δερμάτων συρραπτομένη χλανίς," is obviously a reduplicated formation (*cf.* τι-θή-νη): σῦς, "swine" (*cf.* the above-cited passages of Pausanias); G. σκεπή, "clothing," belongs to the same root as G. σκῦ-τος, Lat. *scū-tum*, "leather;" indeed, we need have no hesitation in connecting even the G. πέ-πλ-ο-ς itself and the Lat. *pallium* (**pl-njo*) with the pan-European equation, Lat. *pellis* = O.H.G. *fel*.

That a way was found out at an early time of making the stiff leather soft and supple by means of various manipulations is probable in itself; though the terms for tanning diverge in the various languages (Sans. *mlâ*; G. δέψειν, Lat. *depsere*—a loan—Germ. *gerben**). The primitive methods of an early tannery are depicted by Homer (*Il.*, xvii. 389, *ff.*):—

> ὡς δ' ὅτ' ἀνὴρ ταύροιο βοὸς μεγάλοιο βοείην
> λαπάσιν δώῃ ταινέειν, μεθύουσαν ἀλοιφῇ,
> δεξάμενοι δ' ἄρα τοίγε διαστάντες τανύουσι
> κυκλόσ', ἄφαρ δέ τε ἰκμὰς ἔβη, δύνει δέ τ' ἀλοιφή,
> πολλῶν ἑλκόντων· τάνυται δέ τε πᾶσα διαπρό.

A joint term for leather is possessed by the Celtic and Teutonic tongues: O.H.G. *lelar* = O.I. *lethar* (**le-tro*: Lat. *al-ûta*?).

However, the Indo-Europeans were by no means limited to the skins of animals for making clothes.

In addition to tanning, two other primeval modes of preparing materials can be detected, felting and plaiting. The former—the art of laying the wool of sheep or other woolly animals in layers, sprinkling it with water, and converting it by means of the glutinous fat into a compact mass, and finally pressing and fulling it—is especially familiar to the nomad peoples of the Turko-Tataric stock. That it was, however, known to the Indo-Europeans also, is clearly indicated by the equation (confined, indeed, to Europe): G. πίλος, "felt," Lat. *pilleus*, O.H.G., *filz*, O.S., *plŭstĭ*.†

* The meaning "tanning" is developed out of "treading" in Sans. *carmamnâ*, Lith. *minti*, "tread, tan" (Fick, *B. B.*, iii. 165).

† The phonetics of this series are not yet fully cleared up. O.S. *plŭstĭ* points to *pel-dsti*, O.H.G. *filz* to *pel-do*; Lat. *pilleus* (so in the best MSS.)

The art of plaiting, however, proved more important and more pregnant of results in the case of the Indo-Germanic family of peoples and languages. Here nature may have played the part of instructress to man, for twining plants and the interlacing twigs of trees must have directed primitive man to this important art. The Indo-Germanic root for it is *prek̂*, as the following combination clearly shows: G. πλέκω, Lat. *plecto*, O.H.G. *flihtu*, O.S. *pletá*, *plesti* (*plekt-*, root *preq?*), Sans. *praçna*, "plaiting, basket-work" (*cf.* also Sans. *rájju*, "cord, rope": Lith. *rezgu*, "plait").

The art of plaiting, however, as I have shown at greater length in my *Handelsgeschichte und Warenkunde*, contains within itself, in embryo, the art of weaving and also of spinning: "If the latter springs from the art of producing braids of hair, bands, and such things by simple twisting, and without using a cross-thread, the former most suggests the art of the basket-weaver, who in his craft has learnt to employ the cross-thread. As a matter of fact, it is impossible to draw the line sharply, either historically or technically, between spinning and weaving on the one side and plaiting on the other. The inhabitants of most of the South Sea Islands understand perfectly well how to use a loom, but not to spin; they use strips of bark for weaving."

After these preliminary technical remarks we betake ourselves to the terminology of weaving and spinning in the Indo-Germanic languages, in the hope of obtaining some data for answering the question, how far the Indo-Europeans had developed the two arts before their dispersion.*

A. Weaving.

The following groups of etymologically corresponding words, arranged according to the frequence of their occurrence, may be distinguished:—

1. Indo-G. *vê* (*vei*): Sans. *vâ*, "weave" (*cf.* Whitney, *Ind. Gr.*, p. 266), *ôtu*, "woof," *úmâ*, "flax," G. ἤ-τριον, "warp" ("weaving instrument," *cf.* νῆ-τρο-ν, "distaff": νέω), ἀ-Fω-τός, "wool" ("weaveable;" *cf.* λυ-τό-ς, "looseable"), Lith. *wó-ras*, "spider," O.H.G. *wâ-t*, O.N. *vá-đ* (woven), "raiment," Lat. *vê-lum*, "wrap, cloth." Also Indo-G. **véjeti*, Sans. *váy-ati*, "he weaves," O.S. *sŭ-vî-to*, "linen," *svila*, "cord," *na-vój*, "liciatorium," O.I. *fi-g-îm*, "weave" (?).

2. Indo-G. *vebh*: Sans. *ûrṇa-vâbhi*, "wool-weaver" = "spider," Zend *ubda*, "woven," Pamir D. *waf*, M. Pers. *bâfam*, Osset. *wafun*, "weave" (Tomaschek, *Pamir D.*, ii. 124, *f.*), G. ὑφαίνω,

can be explained as being from *pil-deus* (*sallere* from **saldere*; *cf.* above, p. 293).

* Plaiting, spinning, and weaving are treated of by V. Hehn, pp. 460, *f.*, 480–83. In addition to the linguistic errors of this scholar, noticed above on p. 294, note, the following require correction: O.S. *ą-tŭkŭ*, "woof": G. ἀντίον, O.H.G. *repo*, "vine": Goth. *skauda-raip*, O.S. *lipa*, Lith. *lēpa*, "lime-tree": G. λέπειν, O.H.G. *louft*, "bark," Lat. *licium* ("indubitably"): Russ. and Pol. *lyko*, "bark," and others. These, amongst other things, occasion the low opinion V. Hehn has of Indo-Germanic weaving.

ὑφή, ὑφαντική, ὑφασία, ὕφασις, ἐφυφή, O.H.G. *weban*, A.S. *wefan*, O.N. *vefa*, "weave," O.N. *veftr*, *veptr*, "woof," A.S. *weft*, &c., M.H.G., *wift*, "fine thread," A.S. *wefl*, O.H.G. *wefel*, "woof."

3. G. κρέκω, "weave," Κίρκη, "weaver," κρόκη, "woof," κερκίς, "shuttle," O.S. *krosno*, "loom" (Benfey, *G. W.*, ii. 315).

4. G. ἄττομαι, "weave" (*ṇτ-jομαι), ἀντίον, "a portion of the loom" (διάζομαι, inorganic like σφάζω by the side of σφάττω, δίασμα, ἆσμα), Sans. *átka* (expressly termed "woven," *vyutá*, in the Rigveda) = Sans. *adhka* (*ṇt-ká), "garment." The Alb. *end*, *ind*, "weave," is regarded by G. Meyer as an early loan from G. ἀντίον, Mod. G. ἀντί (*Berl. Phil. W.*, No. 7, 1887). I had compared it—erroneously—with Lith. *áusti*, "weave," *audimas*, "web" (*aud* from **and* ?).

5. Lat. *texo*, *textor*, *textura*, *textrinum*, *tēla*, "warp," *sub-tēmen*, "woof," O.S. *tŭkati*, "weave," *ą-tŭkŭ*, "warp," *tŭkalij*, "weaver;" though phonetically it is more probable that the Lat. *texo* is to be connected with Sans. *taksh*, "prepare artificially" (F. Miklosich, *Lex Palæoslav.*², 1016), while the fundamental meaning of O.S. *tŭkati*, "to weave," is preserved in *tŭk-nąti*, "thrust in" (Miklosich, *Et. W.*, p. 368).

6. G. τάπης, ητ-, "cover, woven," Mod. Iran. *tab*, "spin, weave" (Mod. Pers. *tâftah*, *tâftik*, *tiftik*; *cf.* Tomaschek, ii. 142). Nevertheless it would be possible that in τάπης we have actually a Homeric loan-word from Iranian civilisation (*cf.* ῥόδον : O. Pers. **varda*, λείριον : Mod. Pers. *lâleh*, σάνδαλον : Mod. Pers. *sandal*).

Looking back at the equations just discussed, it seems to me to follow with great probability, especially from Nos. 1–4, that even in the original language *termini* for weaving as distinguished from plaiting had been developed; and this allows us to infer that some advance had been made in the art. This advance—which lead to the differentiation of the linguistic expressions for weaving and plaiting—can only have consisted in the discovery of a primitive apparatus designed to facilitate the preparation of the raw material for the weaver, male or female. If we examine the terminology of the loom in the Indo-Germanic languages—I have given it in its main outlines in *Handelsgeschichte und Warenkunde*, i. 172, *ff.*—we are struck by the frequent employment of the root *stá* to designate not only the loom as a whole, but also the warp, and finally the weaver himself (*cf.* G. ἱστός, "loom," στήμων, "warp," Lat. *stamen*, Lith. *stãklės*, "loom," O.N. *vefstadr*, Sans. *sthávi*, "weaver"). From this we may infer that the oldest Indo-Germanic weaving apparatus stood upright, and the person weaving worked standing (ἱστὸν ἐποίχεσθαι), a conclusion to which Ahrens had come from a comparison of the Greek and Italian loom with the ancient Norwegian, without reference to philology (*Philologus*, xxxv. 385, *ff.*).

More I do not for the present venture to infer on philological grounds about the construction of the most ancient form of weaving apparatus. If we might trust the further conclusions of the

scholar just mentioned, we should include amongst the features of the oldest form of loom, stretching the warp with whorls, weaving out and thickening the web with the σπάθη. We may remark further that in the Finn languages the essential elements of the primitive weaving apparatus, the woof and warp, as well as a kind of weaver's spool (really a rod with which the woof is thrust into the interstices of the warp) have native names (Ahlqvist, *loc. cit.*, p. 86).

B. Spinning.

1. G. νέω (νήθω, νηθίς, χερνῆτις, νῆμα, νῆσις, νῆτρον), Lat. *neo* (*nēmen*, *nētus*), "spin," O.I. *snāmaire*, "spindle," *snīm*, "spinning" (*B. B.*, xi. 91), O.H.G. *nâan*, "sew," Goth. *nêþla*, "needle," &c. The same change of meaning occurs in Lith. *wergà*, "spin," *warpstè*, "spindle": G. ῥάπτω (Ϝγπ-jω), "sew."* The Indo-Germanic root of the G. νέω, ἔννη was *snā* (*nē*), and literally meant "to plait," as is shown by Goth. *snôrjô*, "basket," O.H.G. *snuor*, "cord, band," O.I. *snâthe*, "thread," &c. There was also a root *snei* (*nei*)—like *vei* by the side of *vē*—which is preserved in O.S. *ni-ti*, *ništa*, "thread," and Sans. *nī-vi*, "apron" ("something spun"); *cf.* W. Schulze, *K. Z.*, xxvii. 426.

2. Sans. *kart*, "to spin," Modern Pers. *karttuah*, "web for spinning," Pamir D. *ĕrt* (Tomaschek, ii. 77), L. *certle*, "glomus" (*B. B.*, ix. 88). The original meaning "to plait" appears in Sans. *kâta* (*cf.* also *krtâmi*, "fasten together"), Lat. *crātēs*, G. κάρταλος, κύρτος, Goth. *haúrds*, Lith. *kràtai*, "zither," Pr. *korto*, "hedge."

3. O.S. *presti*, *predeno*, "νῆμα," *prestica*, "spindle," Lett. *prêst*, "spin with the spindle." Fick (ii.[3] 689) regards "twist" as the fundamental meaning, from which comes Lith. *sprándas*, "nape of the neck."

4. Although preserved, as a verb and in the sense of *neo*, only in the Teutonic Goth. *spinnan*, &c., still this verb is implied by a large stock of words which must start from the fundamental meaning of "spun thread." They are G. πηνίον, "the thread of the woof rolled on the spool" (**pē-njo*), Lat. *pannus*, "cloth" (**pē-no*), Goth. *fana*, "cloth," O.S. *o-pona* (**pon-*). This gives a verbal form, *spen* : *pen*, the oldest meaning of which, "to plait," is retained in the Lith. *pinù*, *pìnti*.

5. Finally, a lost verbal root, *reg* or *rek*, "to spin," seems to me to be implied in G. ἀρκάνη· τὸ ῥάμμα, ᾧ τὸν στήμονα ἐγκαταπλέκουσι διαζόμεναι (Hesych), ἄρκυς, "net," and ἀράχνη, "spider," which I connect with the Teutonic term for the distaff, O.N. *rokkr*, O.H.G. *roccho* (**rukka* from **rukna*, **rug na* = ἀρκάνη). O.H.G. *rocch*, "coat," &c., naturally belongs here (*cf.* *pannus* : πηνίον). *Cf.*, further, κλ-ώθω, "spin" : Lat. *colus*, "distaff."

Reviewing the terminology of spinning in the Indo-Germanic

* In Sanskrit, *sūtrpas*, "treachery, artifice," belongs here. Analogous is G. κάττυμα, κάσσυμα, "leather sole," "plotting, intrigue" : *suo*, "sew" (Osthoff, *M. U.*, iv. 139).

languages it is impossible to doubt—especially when one compares it with the terminology of weaving as set forth above—that series of words, identical in form and meaning, and running through the whole, or nearly the whole, family of languages, like the derivatives of the roots *vē* and *vebh* are absent. The meaning of "plaiting" coexists with that of "spinning," and possesses infinitely more vitality in these words than was the case with terms for weaving. The inference is that the need of distinguishing the art of spinning from that of weaving arose later than the desire to find different linguistic expressions for weaving and plaiting.

Nevertheless the primeval period, even, may have discovered the instrument which constitutes the first stage in the advance from plaiting to spinning—the spindle. This seems to follow from the equation: Sans. *tarkú* (Vedic), Iran. *s-tarkh* (Pamir D.; Tomaschek, *Centralas. Stud.*, ii. 77), G. ἄτρακτος. Alb. *tjer*, "spin." Anyhow, the names for spindle which it contains are of extreme antiquity. The root on which they are based, *tery* (= Lat. *torqueo*, "twist"), is altogether lost in Indo-Iranian, and in Greek only preserved with a final labial (*τρέπω*, "turn"). Further, the meaning of the suffix *-ro-* in the G. *ἀ-τρακ-τος* (from **sm-tṛq-to*) is ancient, for it cannot mean "that which is turned round together"—that gives no sense—but must mean "turning round together" (*cf.* *τλη-τό-ς*, "enduring;" Brugmann, *Grundriss*, ii. 205, *ff.*).*

It is noticeable, even though it carries no great weight, that the name for whorl is in many languages transparently formed from the root *vert*, "to twist": Sans. *vartana*, *vartulá*, Lat. *verticillus*, O.S. *vrĕteno*, M.H.G. *wirtel*, I. *fertas*.

Touching the material for spinning and weaving no doubt is possible, and we can accordingly trace these arts in their essential features back to the primeval period of the Indo-Germanic world. Inasmuch as the sheep was known to the Indo-Europeans—Sans. *ávi*, G. *ὄϊς*, Lat. *ovis*, Lith. *awìs*, O.S. *ovĭca*, Goth. *avi-*, O.H.G. *ewi*; and as its wool has identical names in all Indo-Germanic languages—Sans. *ūrṇá* (**vl̥-ná*), G. *λάνος*, Lat. *lāna* (*vlnā*), *vellus* (**vel-no*), Lith. *wilna*, O.S. *vlĭna*, Goth. *vulla*, Cymr. *gwlan*, Armen. *gel-man*;† and, finally, as all Indo-Germanic peoples are familiar with the preparation of wool when they first make their appearance in history, there is no reason to deny the primeval Indo-

* An exact analogy is offered, according to Bezzenberger in his *Beiträge* (iv. 330), by the fundamental meaning of G. *ἡλακάτη* (Lith. *lenktuvė*, "reel," *lenkti*, "bow, bend, incline").

† The root is *vel*, and I will take the opportunity to point how it can, on the root-determinative theory, be grouped with other roots of related meaning:—

vel, "weave," Sans. *vā*, *vāyati*.
vebh, "weave," O.H.G. *weban*, &c.
ves, "to clothe," Sans. *vas*, &c.
vel, "wool," Lith. *wilna*, &c.

In the reverse order, and with vowel increase, the combination of sounds *ve* or *vo* would appear in *ovi*, "sheep," Lat. *ovis*, &c.

Germanic period of this textile material, in spite of certain technical difficulties raised by its mode of preparation. The history of flax and hemp has been handled above (ch. v.). The word for flax is identical in all the Indo-European languages of Europe, and is due to primeval connection. As early as Tacitus (*Germ.*, 17) linen garments were known amongst the Teutonic women, and this is confirmed by Pliny (*Hist. Nat.*, xviii. 1, 2).

So, too, Cæsar (*B. G.*, iii. 13), mentioning the hide-sails of the Veneti, expressly insists that it was not "propter lini inopiam atque eius usus inscientiam" that the sails were made of hides.

In Homer, again, the Parcæ, who spin the threads of fate, were conceived as spinning flax, not as in later times wool:—

ὕστερον αὖτε τὰ πείσεται ἅσσα οἱ Αἶσα
γεινομένῳ ἐπένησε λίνῳ, ὅτε μιν τέκε μήτηρ.

It, therefore, appears to me an arbitrary assumption on the part of V. Hehn that this *λίνον* must have been first imported from Asia, or that *λίνον* properly meant not flax but bark (*Kulturpflanzen*, p. 141; *cf.* above, p. 294, note). We may, however, admit that when the Greeks had entered their new home, which was not well adapted for growing flax, the use of flax gave way to that of wool (*Handelsgeschichte und Warenkunde*, i. 191).

I think, therefore, we have a right to conceive the materials used by the Indo-Europeans for clothes (several equations for which we have already come across*) as made out of linen as well as from wool, at any rate in the case of the European branch.

The question now remains for discussion whether anything can be ascertained as to the shape and nature of Indo-Germanic clothing. As we must assume that with change of abode and climate it soon altered and necessitated new expressions; and further, inasmuch as an enormous amount of borrowing took place between the nations, both of modes of dress and of the names for them—for fashion inclined to change in ancient as well as in modern times—it may seem as though it would be impossible to carry our investigation into matters of detail.

For all that, I believe the essential features of Indo-European costume, at least, can still be traced.

The *locus classicus* as to Teutonic costume is, as is well known, the much disputed and, unfortunately, highly disputable 17th chapter of the *Germania*.† The most important clauses run: "Tegumen omnibus sagum fibula aut si desit spina consertum: cetera intecti totos dies iuxta focum atque ignem agunt. Locupletissimi veste distinguuntur, non fluitante sicut Sarmatæ ac Parthi sed stricta et singulos artus exprimente. . . . . Nec alius

* I may add to them: Sans. *drâpi*, "mantle": Lith. *drapanà*, "dress" (F. *drap* is remarkable, but unexplained), Sans. *mâla* (Rgv.), "raiment" (according to *B. R.*: *mlâ*, "to tan"?), Lith. *mâlas*, "fine cloth" (G. *μαλλός*, "fleece," G. *λώπη*, "garment": Lith. *lōpas*, "piece of cloth, patch," O.S. *platĭno*, "linen": O.N. *faldr*, "mantle" (J. Schmidt).

† For the literature on this chapter, *cf.* Baumstark, *Ausführl. Erläuterung*, &c., p. 584, *ff.*).

feminis quam viris habitus, nisi quod feminæ saepius lineis amictibus velantur eosque purpura variant partemque vestitus superioris in manicas non extendunt, nudæ brachia ac lacertos; sed et proxima pars pectoris patet."

From this passage we derive the following information: First, the *sagum*, a piece of woollen cloth, fastened with a fibula or thorn, was common to all the Teutons. The Gallo-Teutonic word (*cf.* Diefenbach, *O.E.*) has not yet received an explanation. If it is of Teutonic origin, it might belong to the pan-Teutonic, O.N. *segl*, A.S. *segel*, O.H.G. *segal* (**seg-la*), which, however, is only found in another stage of vowel gradation. For the change of meaning the statement made by Tacitus (*Hist.*, v. 23) would then be important: "Et simul aptæ lintres *sagulis* versicoloribus hand indecore pro velis iuvabantur." That the *sagum*, which for the rest was also worn in Rome, consisted mainly of wool is shown by its ramifications in the Romance languages: Sp. pr. *saya*, It. *saja*, F. *saie*, M.H.G. *sei*, O.I. *sái* (Diez, p. 280), which all alike stand for woollen stuffs.

Second, whereas the *sagum* was worn by all, the *locupletissimi* alone were in possession of a tight garment (*vestis*) fitting close to the body. When Müllenhoff translates *vestis* by "material for an under garment," and accordingly assigns it to all Germans, this is an assumption which is made by the famous Teutonic antiquary on the strength of other considerations not drawn from language or the chapter we are concerned with, and in which I am unable to follow him.

Third, the women wear the same costume as the men—this can only mean "tegumen omnibus sagum fibula aut si desit spina consertum"—excepting only that with them more frequently than in the case of the men, the place of the woollen *sagum* was taken by the *linei amictus*. The rest, owing to the obscurity and ambiguity of the expression, successfully defies, perhaps forever, a completely satisfactory explanation. The passage is usually taken, as though *partem vestitus superioris* were the same as *partem vestitus superiorem*, to mean that the women wore a sleeveless under-garment, a sort of bodice. In opposition to this, Baumstark (*loc. cit.*, p. 589) inquires: "Whether *vestitus superior* is beyond all dispute the garment of the upper part of the body, and could not also mean the over-garment; finally, whether the *vestitus* (*superior*) absolutely must be something different from the *amictus*?" Following up this suggestion, and taking *vestitus superior* as nothing but a variety of expression for the *amictus* mentioned just before, we get a totally different meaning. There is no mention whatever of an under-garment in the case of the women; all that is said is that they do not continue the part in question (*partem*) of the over-garment (*vestitus superioris*) into a sleeve as the Roman women did.* Anyhow, this affords a better explanation of the exposure of

* "If the tunic had sleeves, a sleeveless *stola* was worn over it; if, on the contrary, the under garment was sleeveless, it was usual to wear a stola with sleeves over it" (Guhl und Koner, *Leben der Griechen und Römer*, p. 615).

the upper and fore arm and the adjoining portion of the bust, than we get on the assumption even of a cut-out garment, over which we have to imagine the *sagum* or *linteus amictus* to be worn. How considerable a display of feminine charms is meant by the historian is shown by the addition of the significant words, "quamquam severa illic matrimonia."

Be the women's under-garment what it may, in any case we learn from Tacitus' words that the great mass of male Teutons were content with the woollen *sagum*, and otherwise were naked, *cetera intecti*.*

Now, this statement of Tacitus agrees in all essential points with the most recent conclusions on the most ancient costume of the Greeks, especially with the acute observations of F. Studniczka (*Beiträge zur Geschichte der altgriechischen Tracht*, Wien, 1886). According to them, the costume of the most ancient Greeks consisted of nothing more than the χλαῖνα of the men (: χλαμύς, scarcely originally connected with Lat. *lama*) and the πέπλος (*cf.* above, p. 328) of the women, both woollen garments, and in all essential points similar to each other. "Both consist of simple pieces of woollen material, manufactured on the primitive weaving apparatus; there was absolutely no cutting out or stitching in them; they were made into garments by being merely wrapped round the body and fastened with *fibulæ*." This primitive costume was retained longest by the Greek women. Even in Homer a woman wears nothing but the πέπλος (φᾶρος). This appears most clearly in the toilette of Calypso (*Od.*, v. 228, *ff.*):—

> ἦμος δ' ἠριγένεια φάνη ῥοδοδάκτυλος Ἠώς,
> αὐτίκ' ὁ μὲν χλαῖνάν τε χιτῶνά τε ἕννυτ' Ὀδυσσεύς,
> αὐτὴ δ' ἀργύφεον φᾶρος μέγα ἕννυτο νύμφη
> λεπτὸν καὶ χαρίεν, περὶ δὲ ζώνην βάλετ' ἰξυῖ
> καλὴν χρυσείην, κεφαλῇ δ' ἐφύπερθε κάλυπτρην.

This costume survived into historic times in the dress of the Spartan girls (illustrated in Studniczka, *loc. cit.*, p. 7, figs. 2 and 3). The over-garment, reaching to the feet, is thrown from left to right round the body and fastened at both sides of the neck. Thus the left side of the body is covered, but in such a way that a loop-hole is left for the left arm; on the right the edges hang down without meeting. The fore and upper arm are quite bare, and *proxima pars pectoris patet* (fig. 3). If our conjecture above as to the *vestitus superior* of the Teutonic women is correct, this dress of the Spartan girls affords an illustration to it. Only after their contact with Oriental civilisation did the Greeks come to know the linen tunic—at first only worn by men—which they designated by the Semitic word χιτών (= Hebr. *ketonet*; see author's *Handelsgeschichte und Warenkunde*, i. 193). Other names for Egyptian and Semitic linen stuffs also gradually began to establish themselves in Greece,

* Ancient monuments afford but little material for deciding the question as to the costume of the Teutons in the times of Cæsar and Tacitus.

such as the ὀθόναι (= Hebr. *ethûn*), perhaps also φάρος : Egypt. *päär*, "linen" (Studniczka, *loc. cit.*, p. 89, or to φάραι, "to weave," Hesych.*)

Finally, ancient Italy presents considerable conformity. First, the *toga* (: *tego*, "cover"), which corresponds to the χλαῖνα (or rather the πέπλος) and to the *sagum* of the northern peoples, was originally worn here too by men and women without distinction (*Non.*, p. 540. 31 : "Toga non solum viri sed etiam feminæ utebantur"). Further, the *tunica* (**etunica* : *ketonet*) likewise is borrowed from Semitic civilisation, and likewise was not an indispensable garment in antiquity (Gell., *N. A.*, vii. 12. 3 : "Viri autem Romani primo quidem sine tunicis toga sola amicti fuerunt"). See, further, Baumeister, *Denkmäler*, s.v., *toga*.

On a review of these facts it seems extremely probable that the original garment, at any rate of the European branch of the Indo-Germanic family, was a piece of woollen or linen material worn equally by both sexes (a custom for the existence of which in primitive stages of culture there is ample evidence): that it was, in imitation of the hides which were the earliest clothing of man, thrown round the shoulders like a mantle, and there fastened with *fibulæ* or thorns; and that originally no under-garment was worn beneath it. It is possible that the place of the latter was taken in the primitive period by a loin-cloth (not mentioned indeed by Tacitus), such as is seen on ancient Greek monuments (Studniczka, p. 31) or in ancient Rome was worn in place of the tunic (*cinctus*, *subligaculum*, *campestre*). Studniczka has an attractive conjecture (p. 31, n. 10), that the use of trousers which the northern peoples affected more and more is connected with this. Their discovery, at any rate as far as Europe is concerned, seems to be due to the Celts, as is indicated by the series of words, which spread by borrowing from west to east: Celt. *braccæ*, O.N. *brókr*, O.H.G. *bruoh*, Russ. *braki*.

As showing that the idea of using a girdle had been developed in the primitive period, the equation: G. ζώννυμι, ζώνη, ζῶμα, Lith. *jùsta*, "girdle," O.S. *po-jasŭ*, "ζώνη," Zend *yástô*, "girdled," is important.

Protection for the feet, again, was early provided. *Cf.* G. κρηπίς, Lat. *carpisculum*, Lith. *kùrpė*, A.S. *hrifeling*, O.N. *hriflingr* (Kluge). An important equation in this respect is: Lith. *aũklė*, "foot-strap" (also *aũtas*) : Zend *aothra*, "shoe," *aothrava*, "gaiter" (**au-tlo* : Lat. *ind-uo*, *ex-uo*). Coverings for the head have already been mentioned in part iii. ch. x.

In this attempt to establish the main features of Indo-Germanic costume, we have confined ourselves to a comparison of the most important European peoples, because here the salient facts are clearer, and have been more thoroughly investigated than in the

* With φάραι : ὑφαίνειν, πλέκειν might be connected N.S. *brdo*, "licium," B. *brŭdo*, Less. Russ. *berdo*, "weaver's comb" (**ber-do*), O.H.G. *bor-to*, "seam, border (woven"), O.N. *bordi*. Bezzenberger, indeed, has compared Lett. *buras*, *burvas*, "little sail" (Fick, *Vergl. W.*, ii.[3] 165).

case of the Indo-Iranian peoples (*cf.* on the Iranians, W. Geiger, *Ostiran. Kultur*, p. 224, *ff.*; on the Indians, Zimmer, *Altindisches Leben*, p. 264, *ff.*). It would seem that here we have to do with a more advanced stage in the evolution of dress, inasmuch as over and under garments here always appear together. But the future has yet to bring us a precise account of the history, especially of Indian dress, in the most ancient times.

This chapter suggests various things which require clearing up. The history of hairdressing, a matter of great importance in manners and customs, might have been mentioned; the question of the tattooing, of which we have evidence in the case of several Indo-Germanic peoples (*cf.* V. Hehn, p. 18, *f.*, and above, p. 88), might have been discussed and other points. Unfortunately we must refrain from entering on these subjects.

We may remark in conclusion that all sorts of ornaments for the decoration of the person may have been discovered in the primeval period. An important equation in this connection is Zend *minu* (Sans. *maṇi?*), G. μάννος, Lat. *monile*, O.C. μανιάκης, L. *muince*, O.S. *monisto*, O.H.G. *menni*, which belong to O.H.G. *mana*, "mane," Sans. *mányá*, L. *mūin*, "neck," just as O.S. *grivina*, "necklace"; *griva* = Sans. *grīvā*, "neck." The most important material in the manufacture of such productions of primitive art may have been copper.

CHAPTER IX.

DWELLINGS.

Wagon-Dwellings—Terminology of Wagon-Building—Underground Habitations—Indo-Germanic Huts—Their Materials—Their Oldest Form—Door—Window—Hearth—Stalls.

THE ancients knew that a great portion of the north of Europe was occupied by a semi-nomad population, whose only dwellings were their wagons, on which they conveyed their goods and chattels, wives and children, to fresh settlements and pastures new. This is stated most unanimously, with regard to the east of Europe, about the Scyths and Sarmatæ, whose wagon-life is one of their most important characteristics:—

> "Campestres melius Scythæ,
> Quorum plaustra vagas rite trahunt domos,
> Vivunt et rigidi Getæ."
>
> (*Hor.*, c. iii. 24.)

But the same custom is to be found amongst peoples undoubtedly Indo-Germanic. Thus, the Bastarnæ, the first Teutonic tribe to make its appearance in history (about B.C. 200), carry their wives and children on wagons with them (Müllenhoff, *D. A.*, ii. 103, *f.*). So, too, the Suebi could without difficulty set their dwellings on their wagons, and go off with their herds where they listed. The dwellings of the Cimbri, which likewise were on their wagons ("domus plaustris impositæ"), were defended by the dogs when their owners fell (Pliny, *Hist. Nat.*, viii. 40, 61), &c.*

After what we have said above (ch. v.) about the unsettled mode of life amongst the other Indo-Europeans, and about the weakness of the ties that bound them to the soil on which they settled, there can be no doubt that the use of wagons as dwellings is a trait from the life of the primeval period which the northern tribes preserved. Nor can we wonder if we find a tolerably extensive terminology for wagon-building in the original language. To say nothing of the fact that nearly all Indo-European languages

* The most frequent term for the travelling wagon of the north is the Lat. *carrus*, probably itself a barbarous word (above, p. 263). *Cf.* O.I. *carr*, O.H.G. *charro*, also καρρα· ἡ ἐπὶ τῆς ἁμάξης σκηνή and καρροῦς· οἱ Σκυθικοὶ οἶκοι (Diefenbach, *O.E.*). In war these *carri* were used as a defence, *carrigā*.

plainly use the root *vegh* to designate the wagon (Sans. *vâhana*, G. ὄχημα, ὄχος, O.H.G. *wagan*, O.S. *vozŭ*, Lith. *vežimas*, O.I. *fén* (**vegh-n*), we find agreement in the names of the following portions of the wagon :—

Wheel: Lat. *rota*, Lith. *rãtas*, O.H.G. *rad*, O.I. *roth*, Sans. *rátha* ("wagon").

Wheel: Sans. *cakrá*, G. κύκλος, A.S. *hweol* (**qe-glŏ*)—without reduplication: O.S. *kolo*, O.N. *hvél*.*

Axle: Sans. *ákshа*, G. ἄξων, ἄμ-αξα, Lat. *axis*, O.H.G. *ahsa*, O.S. *osĭ*, Lith. *ašis*.

Nave: Sans. *nábhi*, A.S. *nafu*, O.H.G. *naba*, O. Pr. *nabis*.

Linch-Pin: Sans. *áni*, O.H.G. *lun*, A.S. *lynes*, O. Sax. *lunisl*, (Fick, *B. B.*, vii. 95).

Pole: Lat. *têmô* (**tevesmŏ*), O.H.G. *dîhsala*, O.N. *þísl*, A.S. *thisl* (?).

Yoke: Sans. *yugá*, G. ζυγόν, Lat. *iugum*, Goth. *juk*, O.S. *igo*, Lith. *jungas*, Cymr. *iou*.

In this collection, it will be observed, there is no equation for the spoke of the wheel (Sans. *ará*, G. κνήμη, Lat. *radius*, O.H.G. *speikha*). The terms for felloe also diverge, except G. ἴτυς, which correspond exactly to Lat. *vitus* (lit: "withy"). Perhaps O.H.G. *felga*, "felloe" belongs to O.H.G. *felawa*, "withy" (above, p. 271).

This indicates that we must conceive the primitive wheel as being without spokes. In the oldest times the only way known of making a pair of wheels was to hew them and the axle-tree connecting them all in a piece out of one and the same tree-trunk: and it must therefore be regarded as an advance when—obviously before the dispersion—the art of manufacturing the axle-tree separately, and of fastening it into the *tympanum* by means of a linch-pin, was discovered.

The picture we thus get corresponds to the description given by the ancients of the Roman *plaustrum*: "The wheels of the *plaustrum* have not spokes, but are tympana which are of a piece with the axle-tree, and are surrounded by a rim of iron. The axle-tree turns round with the wheels: for the wheels are fastened by the spindles, *i.e.*, the most projecting part of the wheel" (Probus on Virg., *Georg.*, i.). The Teutonic wagon drawn by cattle, which is represented on the triumphal column of Marcus Aurelius, must have been exactly the same (*cf.*, *e.g.*, Felix Dahn, *Urgeschichte der germ. und roman. Völker*, ii. 161).

The acquaintance of the Indo-Europeans from of old with the art of wagon-building may be regarded as a distinctive characteristic of this family of peoples, which marks them off alike from the neighbouring Finns and the tribes of Turko-Tataric origin. Everything in the Finn languages relating to the art of wagon-building is of Slavonic or Teutonic origin (Ahlqvist, *Kulturwörter*, p. 125). So, too, according to Vámbéry (*Primitive Kultur*, p. 128), the wagon has been a foreign invention to the Turks of all times. From

* The short quantity is guaranteed metrically.

primeval times the inhabitants of the Asiatic steppes have employed the camel instead to carry on its patient back, tent, wife, and child. The Indo-Europeans however, who, as we saw on p. 267, did not enjoy the acquaintance of this valuable beast of burden, which is wagon and horses all in one, were at an early time driven to invent the wagon, a *sine qua non* of their wandering mode of life.

Assuming that we may regard the Indo-Europeans during their migrations as ἁμαξόβιοι, like the gypsies or any other wandering people, we are confronted with the further question what their habitations were like when they made settlements—settlements which tended to become more and more permanent, the more the Indo-Europeans devoted themselves to agriculture.

Here we have first to speak of the subterranean dwellings, *i.e.*, dwellings dug in the earth, the existence of which is recorded amongst numerous Indo-Germanic peoples, and which afforded protection alike against the summer's heat and the winter's cold. Such habitations were still known in the Avesta under the name of *kata* * (: *kan*, "dig"). This word may be the source of the usual term for house in modern Persian (*kad*, *kadah*) and in the Pamir dialects (*ked*, *ced*, &c.); *cf.* Tomaschek, *Pamir D.*, ii. 77. We have similar statements as to the Phrygians in *Vitruv.*, ii. 1. 5. Amongst the Armenians, too, Xenophon (*Anab.*, iv. 5. 24) found κατάγειοι οἰκίαι. Their entrance was like the opening of a well, widening downwards. For the cattle, which were also taken below ground, lateral shafts were driven. Human beings descended by a ladder.

Of the Teutons, Tacitus (*Germ.* 16) says: "Solent et subterraneos specus aperire eosque multo insuper fimo onerant, subfugium hiemis et receptaculum frugibus, quia rigorem frigorum eius modi locis molliunt, et si quando hostis advenit, aperta populatur, abdita autem et defossa aut ignorantur aut eo ipso fallunt quod quaerenda sunt." This statement is further confirmed by Pliny (*Hist. Nat.*, xix. 1. 2): "In Germania autem defossi atque sub terra id opus (texendi) agunt" (above, p. 333).

The old Teutonic name for this kind of subterranean dwellings and weaving-rooms was O.H.G. *tunc*; and to this day *tung* is the name given in Nürnberg, *dung* in Augsburg, to a cellar-like weaving-room. Now, as Tacitus expressly speaks of these dwellings being covered by *fimus*, nothing seems more obvious than to regard *tunc*, "textrina," as identical with O.H.G. *tunga*, "stercoratio," "manuring" (Wackernagel, *Haupts Z.*, vii. 128, *ff.*). Only, on closer examination, it seems extremely suspicious that the Teutons should designate a kind of dwelling by a word which originally meant simply "excreta"—manuring was probably not known as

* Perhaps O.S. *kąšia*, "house, hut, tent," from **koni-ja*, also belongs here. It may be remarked that the Finn. name for house is exactly the same as in Iranian: Finn *kota*, Esth. *koda*, Mordv. *kud*, Tscherem. *kuda*. Is this a case of borrowing? Ahlqvist (p. 103, *ff.*; *cf.* also above, p. 45) does not observe this resemblance. Anyhow, the Finn. *sauna*, Esth. *saun*, &c., "subterranean dwelling," is genuinely Finn.

early as Tacitus (*Pantaleberg, Progr.*, p. 15, *f.*, Hamming, 1880)—and got by a derivative from the word. It seems to me, therefore, more reasonable to separate, as Grall (*Sprachschatz*) wished to separate, the two Old High German words, *tunga*, "dunging," and *tunc*, "dwelling dug in the earth." The latter can be referred to an Indo-Germanic *dhugh-*. With this we could then connect the hitherto unexplained stock of words, Gr. τάφ-ρος, "trench," τάφος, "grave," θάπ-τω, "dig," "bury" (**dhəgh-jō*), in a perfectly regular manner as regards both phonetics and meaning.* O.H.G. *tunc* would then be equivalent to *gruobe*, with which it is occasionally synonymous (Weckernagel, *loc. cit.*, p. 131).

The construction of subterranean dwellings is very frequently mentioned as characteristic of the Scythian tribes,† whose comfortable winter life receives idyllic treatment at the hand of the poet:—

> Ipsi in defossis specubus secura sub alta
> Otia agunt terra, congestaque robora totasque
> Advolvere focis ulmos ignique dedere.
> Hic noctem ludo ducunt et pocula laeti
> Fermento atque acidis imitantur vitea sorbis.
>
> (Virg., *Georg.*, iii. 376, *ff.*).

Of course, the poet of the metropolis had never visited dwellings of this kind, the dark side of which is vividly portrayed on the strength of modern analogies by V. Helm (p. 471, *f.*). On the contrary, these verses are a piece of the romance which classical writers are so fond of casting over the barbarous north.

The Greeks also have transmitted several terms for this sort of cave-like dwelling (J. Müller, *Privatalterthümer*, p. 339): γύπα, γυπάρια, φωλεοί (: *fallu*, "hiding-place"), τρῶγλαι, σπήλαια. Of these γύπα (glossed by Hesychius with καλύβη, "hut," θαλάμη, "room," and ἡ κατὰ γῆν οἴκησις) recurs in Teutonic; and with it I connect O.N. *kofi*, "hut," A.S. *cofa*, "room," M.H.G. *kobe*, "stall," O.H.G. *chubisi*, "hut" (**gupa*). The fundamental meaning will then be "subterranean hole." *Cf.* above, Zend *kata* : Mod. Pers. *kad*, "house." O.S. *župište*, "cumulus, sepulcrum," &c., is to be kept separate.

So much for the subterranean dwellings of the Indo-Europeans. It is, however, beyond the possibilities of doubt that they were already acquainted with the beginnings of the art of building huts and houses. This is directly indicated by such equations as: Sans. *dāmā*, Armen. *tun*, G. δόμος, Lat. *domus*, O.S. *domŭ*, O.I. *aus-dam*, "prodomus" : δέμω, Goth. *timrjan*, "joiner" (but see above, p. 27); Sans. *śālā*, G. καλιά, Lat. *cella*, Teut. *halla* (: *celāre*, O.H.G. *helan*);

* *Cf.* Curtius, *Grdz.*[4], p. 502; J. Schmidt, *Voc.*, i. 164. Schade (*Ahd. W.*) compares *tunc* and *dunger* : Lith. *denkti*, "cover," which is phonetically possible, but does not give the characteristic sense to *tunc*, "subterranean dwelling," which our explanation does.

† Ἔφορος δὲ τοῖς Κιμμερίοις προσοικοῦν φησι αὐτοὺς ἐν καταγείοις οἰκίαις οἰκεῖν, ἃς καλοῦσιν ἀργίλλας (Strabo p. 351).

Ἀργίλλα· οἴκημα Μακεδονικὸν, ὅπερ θερμαίνοντες λούονται (Suidas). *Cf.* L. Diefenbach, *O. E.*, p. 91. 233, *f.*

Zend *dvarem*, "door," Armen. *durn*, G. θύρα, Lat. *foris* (also *forum*), O.S. *dvĭri*, "door" (*dvorŭ* = *forum*), Lith. *dùrys*, Goth. *daúr*, O.I. *dorus* (Sans. *dvár-* (?); *cf.* above, p. 108, *f.*); Sans. *ăta*, Zend *aithya*, Lat. *antæ*, "door-posts." Further, two pan-Indo-European roots are unanimously used in the original sense of "cover" to afford designations for the house (and roof). Thus, root *steg*, *teg*, Lat. *tego*: G. στέγος, τέγος, O.I. *teg*, Lat. *tectum*, O.N. *þah*, Lith. *stógas*; and also a root *qleit*, *qlit* = O. Sax. *hlîdan*, "cover," "shut"; Goth. *hleiþra*, "hut" (O.N. *hliþ*, "door"), O.S. *klětĭ*, "domus, cavea," I. *cléthe*, "roof" (*cliath*, "crates"). Perhaps G. κλισίη, κλίσιον, κλισιάς, "hut, tent," also belongs here.*

As, however, it is obvious that most of these expressions are just as applicable to marble halls as wooden huts, and that they accordingly tell us nothing of the nature of the Indo-European house, we must look for other means of information if we wish to be more precise.

Now, I believe that with regard to the most ancient Indo-European houses two positions can be established, first that the materials of which they were built consisted merely of wood, basket-work, and loam, and not of stone; next, that the most usual, if not the most ancient form, at any rate of the European hut, was circular.

Turning our attention first to the former point, we find that the facts are naturally simplest and most transparent in the case of the northern peoples. According to the statement of Tacitus (*Germ.* 16), the Teutons were ignorant of the use of bricks and mortar: "Materia ad omnia utuntur informi et citra speciem aut delectationem." Similarly, Herodian says (vii. 2) of Maximinus: "He burnt down (anno 234) the whole district (of the Alemanni, Chatti, Hermunduri) . . . . . for the fire readily consumed whole dwellings, as owing to the absence of stone and bricks they are made entirely of wood," &c. (*cf.* Baumstark, *Ausf. Erl.*, i. 566). Basket-work, too, was employed, as linguistic evidence indicates. Thus, in Old High German, *want*, "wall," stands by the side of Goth. *vandus*, "withy," in Gothic itself the wall is called *vaddjus* (O.N. *veggr*), which, coming from **voj-u-s*, may belong to the root *vei* (**véj-eti*) mentioned in the previous chapter on p. 329, with the original meaning in this case of "plait." † Again, we ought perhaps not to separate, as Kluge (*Et. W.*[4]) does, Goth. *laufs*, "leaf," &c., and the O.H.G. *louba*, "hut, tent, room," which has found its way into Middle Latin (*laupia*) as well as into the Romance languages (Lomb. *lobia*, It. *loggia*); *cf.* Rautenberg, *loc. cit.*, p. 11. The

* Feist (*Grundriss der gotischen Etym.*) differs and compares, after Curtius, Goth. *hlija* and *hleiþra* by the side of κλίσίη with κλίνω.

† Goth. *baúrgs-vaddjus* τεῖχος, *grundu-vaddjus* θεμέλιον. The fact harmonises with the above explanation that the Teutonic fortifications on the triumphal column of Marcus Aurelius (F. Dahn, *Urgeschichte*, ii. 172) are obviously made of basket-work at the upper end. The Lat. *texo* occurs in the same sense as the root *vei* would here be used. *Cf.* Ovid, *Fasti*, vi. 261, of the most ancient temple of Vesta:—

"Quæ nunc ære vides, stipula tum tecta videres,
Et paries lento vimine textus erat."

straw-roof is mentioned by Pliny (*Hist. Nat.*, xvi. 36, 64) as a peculiarity shared by all the northern peoples: "Tegulo earum harundinum domus suas septentrionales populi operiunt, durantque levis recta talia."

What indirectly proves that stone buildings were unknown to the Teutons is the fact that nearly all terms relating to this new art are derived from the Latin. A reference to the collections in W. Franz (*Lat.-rom. Elemente im Althochd.*, Strassburg, 1884) will here suffice. *Cf.* O.H.G. *mûra* = *mûrus*, *zigal* = *tegula*,* *mortere* = *mortarium*, *pfost* = *postis*, *phîlari* = *pilarius*, *turri* = *turris*, *scintila* = *scandula*, *pforzih* = *porticus*, *chalch* = *calx*, &c. In the year 356, indeed, Julian found amongst the Alemanni, between the Rhein and the Main, whole villages built on the pattern of the Roman villa (F. Dahn, *Urgeschichte*, i. 56, from Amm. Marc.).

Even before coming under the influence of Rome, the Teutons had perhaps stolen some glances at the Celts' mode of building, as is indicated by the loan of the Goth. *kêlikn*, "tower, upper storey, banqueting-hall," from Gall. *celicnon*, "tower" (Stokes, *Beiträge*, ii. 100, 108).

The state of things among the Slavs is similar. That the Veneti built houses even in the first century B.C., in contrast to the Sarmatæ, *in plaustro equoque viventibus*, is stated by Tacitus (*Germ.* c. 46). What miserable affairs these houses continued to be even centuries later is shown by what Procopius says (*B. G.*, iii. 14) about the Σκλαβηνοὶ and Ἄνται (οἰκοῦσι δὲ ἐν καλύβαις οἰκτραῖς διεσκημένοι πολλῷ μὲν ἀπ' ἀλλήλων). Here, too, language shows that we are only to think of wooden structures, for "there is no pan-Slav expression to warrant the assumption that the primitive Slavs understood the art of building with stone" (Krek, *Einleitung*², p. 145). In this respect the Slavs are rather pupils of the classical peoples on the one side, and of their Teutonic neighbour on the other; but we need not discuss this further. Thus, *e.g.*, O.S. *plinŭta* corresponds to G. πλίνθος, O.S. *izvistĭ* to M.G. ἄσβεστος, O.S. *trěmŭ*, "tower," to G. τέρεμνον, O.S. *klakŭ* to Germ. *chalch*, Russ. *cigelĭ* to Germ. *ziegal*, &c.

It is very remarkable that a term for the house as a whole (O.S. *hyzŭ*), which recurs in all Slavonic languages, was borrowed, and that at an early date, from Teutonic (O.H.G. *hûs*, &c., of uncertain origin†). O.S. *hlěvŭ*, "stall," *hlěvina*, "house," are probably of similar origin (O. Sax. *hleo*, O.N. *hlé*, Goth. *hlija*).

In the south of Europe also, in spite of the splendour of the marble with which we are dazzled, unmistakable traces of the primitive hut structure have survived. "When the Greeks and

* The Goths had a native word, *skalja*, which is rather to be connected with σκέλλω, "dry, parch," than with, σκάλλω, "dig," as it is by Feist (*loc. cit.*).

† The usual derivation of O.H.G. *hûs* and *hütte* is from G. κεύθω (ὅταν σε δόμοι κεκύθωσι καὶ παῦλαι, *Od.* vi. 303). *Cf.* also καλύβη : καλύπτω; G. καλιά, Lat. *cella* : *celare*, &c. The fundamental form would then be **kût-to*. Feist (*loc. cit.*, p. 58) objects that "a participle in *-to-* never has an active sense." But this is not correct. *Cf.* Brugmann, *Grundriss*, ii. 206, and above, p. 332. I therefore regard the interpretation of *hûs* just mentioned as still possible.

Italians immigrated into the two classical peninsulas, they knew no other form of dwelling than the hut made of straw, twigs, and loam." The archæological evidence for this assertion has been given, especially for ancient Italy, by W. Helbig in *Die Italiker in der Poebene*, p. 45, *ff.* It further receives the support of linguistic observations. Thus loam and not stone buildings are clearly implied by the relationship of G. τεῖχος, "wall," τοῖχος, "wall," with Sans. *dêhî*, "thrown up earth, wall," with O.N. *deig*, "dough," Goth. *deigan*, "make out of clay," Lat. *fingere, figulus*, "potter." The G. ὀροφή, "roof" (: ἐρέφω, "cover," O.N. *ráf, ráfr*, "roof," O.H.G. *râfo, râvo*, "beam"), is identical with ὄροφος, "rushes," just as in Latin *culmen*, "roof," is one with *culmus*, "straw."

Amidst these straw-thatched and rush-covered huts of loam and wood in the Balkan Peninsula rose the work of Phenician masons, the stone palaces of Greek chieftains, such as the excavations at Tiryns have revealed to the wondering gaze; for centuries, and even in the Homeric age, the model which was imitated, though not with complete success, in the houses of the Greek ἄνακτες. In view of the undoubted dependence of the Greeks on the orientals for the art of building, it is a characteristic feature in their linguistic attitude towards the intrusions of foreign culture (*cf.* above, pp. 74, 146), that they confine themselves almost entirely to the resources of their own language in providing for the terminology of building. Either the old Indo-Germanic expressions were transferred to the new conceptions (θύραι, πρόθυραι, δῶμα, δόμος, πρόδομος), or new terms were fashioned by simple means out of the materials of the native tongue (thus μέγαρον, "men's room," lit. "the great," ὑπερῷον, "upper storey," lit. "the upper"). But few expressions are open to the suspicion of being Semitic, for instance, perhaps, κίων,* "pillar" = Heb. *kîjûn*, "statue," and λέσχη, "a sort of public inn" = Heb. *lishkâh*, "shrine in a temple," "room in a stronghold," "banquet-room."†

The linguistic attitude of the Romans towards Greek culture differed from that of the Greeks towards Semitic civilisation; and a very considerable number of Greek *termini*, belonging to a more advanced stage in the art of building, were taken over by Latin in the course of time (O. Weise, *loc. cit.*, p. 193, *ff.*).

Finally, the Indo-Iranians of the oldest period were also quite ignorant of stone buildings. In the epoch of the Atharvaveda the

* But an Indo-Germanic etymology is not wanting: G. κίων = Armen. *siun* (Hübschmann, *A. St.*, p. 49).

† The only possible derivation of λέσχη from the Greek, that is from *λεχ-σκη : λέχος, "bed," Goth. *ligan*, takes us back to the same fundamental meaning of "inn" (*cf.* πάσχω from *παθ-σκω; Meister, *Die Griech. Dialekte*, ii. 50). Leist (*Gräco-italische Rechtsgeschichte*, p. 119, *f.*) regards λέσχη as meaning "the house of the community" = Sans. *sabhâ* from the beginning, without regard to the fact that the oldest passages mentioning the λέσχη in Homer and Hesiod do not agree with this. A beggar would certainly not go to the "house of the community" to spend the night there (*Od.* xviii. 327). I regard the municipal meaning of the word as a later meaning therefore (*cf.* author's *Handelsgeschichte und Warenkunde*, i. 28, *ff.*).

Indian house was a purely wooden structure, which is described by Zimmer (*Altind. Leben*, p. 153) as follows: "9 Pillars—four in number—were erected in the solid ground, and stays were placed obliquely against them. The corner pillars and foundation pillars were fastened together by roof beams. On them were placed long bamboo rods, to act as spars for the lofty roof. Between the corner pillars various posts, according to the size of the house, were also erected. Straw or reeds were used in bundles to fill the interstices in the walls, and to a certain extent to line the whole. Nails, clamps, cords, and straps served to hold the whole together."

A very similar appearance may have been presented by the house of the Avesta, about which, however, we know but very little (*cf.* W. Geiger, *Ostiran. Cultur*, p. 216); though the ancient Persians already knew how to burn bricks (Zend *ishtya*).

How lightly built and tent-like, at any rate, the house of the Avesta people was is shown by a passage of the Vendidad to which Geiger (*loc. cit.*) refers, where in the case of a man who has died from home two alternatives are mentioned as possible: either to take the corpse to the dwelling or the dwelling to the corpse.

The second of the two positions stated above, viz., that the usual form, at any rate of European huts, was circular, may be more briefly dismissed. If it is correct, we shall not go far wrong in regarding it as an imitation of the felt-covered, circular tent of the nomad.

The Teutonic huts represented on the triumphal column of Marcus Aurelius are round. So, too, Strabo (p. 197) describes the dwellings of the Belgæ: τοὺς δ' οἴκους ἐκ σανίδων καὶ γερρῶν ἔχουσι μεγάλους θολοειδεῖς, ὄροφον πολὺν ἐπιβάλλοντες. The primitive form of the Italian hut, again, has been shown by Helbig to be round; and as the ash urns from the necropolis of Alba Longa are obviously intended to represent the round huts of the living, so, too, the prehistoric dome-shaped graves of Cœre, Menidi, and Orchomenus are to be regarded as but reproductions of human dwellings—of the "circular tent," and "semi-subterranean huts of earth" (Helbig, *loc. cit.*, p. 50; J. Müller, *Privataltert.*, p. 341). Possibly a Græco-Italian name for the original circular structure of wood has survived: I compare Lat. *tūli*, "wooden tower," structure of wood" (*cf.* on this word, W. Deecke, *Die Falisker*, p. 24, and above, p. 325, note), with the Greek θόλος, which means, both "circular structure, and dome-shaped roof," but whose meaning in the Homeric chieftain's house is not indeed quite clear (J. Müller, *loc. cit.*, p. 352). Anyhow, the word always indicates a circular structure, and also a round temple (Guhl and Koner, *Das Leben der Griechen und Römer*[1], p. 48), and it is precisely this word (θολοειδῆς) that Strabo uses to represent the circular huts of the Celts. For the rest, it may be that θάλαμος also is, as Vaniček conjectured (*Et. W.*, p. 395), connected with θόλος. A higher opinion of the Indo-Germanic house is taken by R. Henning in his pithy treatise: *Das deutsche Haus in seiner*

historischen Entwicklung (Strassburg, 1882). He regards the primitive type as preserved in the "East Teutonic" house, which according to him corresponds in all respects with the Greek dwelling-house. "The East Teutonic house, too, has an open, roomy entrance-hall in front, the northern name for which has a counterpart in nearly all the Aryan languages (*cf.* above, p. 341, on *halla*, the Indo-Eurupean counterparts of which have, however, other meanings). Behind it there lies again a fairly square room, open up to the roof, with the hearth in the centre, and a smoke-hole in the ceiling. Even the internal arrangements agree: the seats are arranged along the two sides, and the bed stands in the far corner of the chamber" (p. 108). Attractive as these arrangements are, it is just in this quarter that the possibility of similar but independent developments is particularly strong.

Perhaps we ought not to credit the primeval period with only one type of house-structure. It is conceivable that the round hut was the dwelling of the ordinary man, while more spacious block-houses were built for the kings and chief men in the form described by Henning.

We shall, however, return to this subject in ch. xi.

We conclude this chapter with some scattered remarks on the internal arrangements of the Indo-Germanic hut.

The names for window in Indo-Germanic languages exhibit as much diversity as the names for door do agreement (*cf.* above, p. 342; the nature of the door is illustrated by Goth. *haúrds*, O.N. *hurd*, "door" = Lat. *crātēs*, "basket-work.")* Windows, therefore, cannot have been an essential feature in the Indo-Germanic dwelling. When the tribes of the north made their acquaintance with this idea—perhaps not until they came in contact with the south (*cf.* the loan of Lat. *fenestræ* to High German)—they designated it with words meaning eye, opening: O.N. *wind-auga* (Eng. *wind-ow* = *wind-eye*), Goth. *auga-daúro*, O.S. *okno*. Naturally there was nothing in the shape of a chimney to carry off the smoke from the fire on the hearth: it had to find its own way out through natural or made holes in the roof, which was not separated from the room by any ceiling. According to Alemannic law, a new-born child is counted to have lived if it has opened its eyes and seen the four walls and the roof. We are reminded of these times when some languages seem to conceive the roof as black and soot-begrimed (Goth. *hrōt*, "roof": O.H.G. *ruoz*, G. μέλαθρον : μέλας; *cf.* also Lat. *atrium* : *ater*—according to others from Zend *atar*, "fire").

Precautions must have been taken at an early period to confine the fire to a certain place in the hut. Perhaps we may place here the—certainly doubtful—equation: Goth. *aúhns*, O.H.G. *ofan* = G. ἰπνός, "oven": Sans. *ukhā́*, "vessel." *Cf.*, further, Goth. *aegō*, "ashes" = G. ἐσχάρη, "hearth," just as Sans. *āsa*, "ashes" (Sans.

* A Græco-Italian equation for the door-key is G. κλείς = Lat. *clāvis*, "key." Its original character is shown by the I. *clōi*, "[illegible]," which corresponds exactly. *Cf.* also Lat. *clāvus*, "nail."

ishtrí, "fireplace") = Lat. *ārā*, Umbr. *asa* (O.H.G. *essa*).* On Vesta (Ἑστία), see above, p. 129.

How foreign the notion of a regularly heated room was originally to the whole north is shown by the circumstance that the expression for the idea, though its origin is not yet ascertained, was taken over by the Teutonic (O.H.G. *stuba*), Romance (It. *stufa*), and Lithu-Slavonic (Lith. *stubà*, O.S. *istŭba*) languages alike.

Whether special stalls were erected to protect the cattle from winter in the primeval period may remain an open question. Some equations such as G. *μάνδρα* = Sans. *mandirá*, A.S. *bōs*, O.N. *bás*, Goth. *bans-ts* = G. (*συ*)*θειός* (author in *K. Z.*, xxx. 483) seem to point to it. In general, however, in winter the domestic animals either shared the human habitation, as was the case amongst the Armenians (*cf.* above, p. 340), or wintered in the open, in protected spots and folds, in which case many beasts, often whole herds, may have perished from lack of food, the attacks of prowling beasts of prey, and from cold.

* Osthoff (*Beitr. v. Paul u. Braune*, xiii. 396) differs to some extent.

CHAPTER X.

TRAFFIC AND TRADE.*

Exchange—Buying and Selling—The Stranger—Origin of Guest-Friendship—Dumb Barter and Sale—Barter and Exchange in Language—Fords and Roads—Did the Indo-Europeans dwell by the Sea?—Navigation.

The idea of exchanging some of one's own possessions in order to get something of another's goods is such an obvious one that we may assume its existence in every stage of culture. Such exchange, however, is still far removed from the method of regular purchase, which clearly consists of the two phases of buying and selling, and only comes to deserve the name in the proper sense when a metallic standard of value, money, comes into play. In barter the purchaser is also the seller, and *vice versâ*; we can, therefore, hardly be surprised if the mercantile terminology of the Indo-European languages still betrays evident traces of the primitive state of things.

The idea of barter is expressed in the Indo-Germanic languages by the root *mei*, which appears in Sans. *mê*, *máyatê*, desid. *mitsatê*, in the Lat. *mūnus*, "(return-)gift," *mūtare* (: **moi-ta*), in the Lithu-Slav. *maĩnas-mĕna*, "barter," &c. The object given in exchange for something—later the "purchase-price"—was designated in the original language by **vesno* (Sans. *vasná*, G. ὦνος, Lat. *vēnum*, O.S. *věno*, "dowry" (orig. "purchase-price"), Armen. *gin*). The verbs derived from this substantive (Sans. *vasnay*, "to higgle"), are divided equally between the conceptions of buying (G. ὠνέομαι, Armen. *gnem*) and selling (Lat. *vēnire*, *vēnumdare*, O.S. *věniti*). The meaning is more uniform in the series: Sans. *krî-ṇā-mi*, I. *crenim*, G. πριάμαι, "buy;" *cf.* also Lett. *kreeńs*, *kreena náuda*, "present to the bride" (literally, "purchase-price," like O.S. *věno*, Bezzenberger in his *B.*, xii. 78); though here, too, we have by the side of I. *crenim*, "buy," the related *creecaim*, "sell" (Windisch, *Beiträge*, viii. 38).

How late, especially in the North Europe, the need of distinguishing beetween buyer and seller was felt, is best shown by

* This chapter is based on the more detailed treatment of the subject in my book, *Linguistisch-historische Forschungen zur Handelsgeschichte und Warenkunde*, i. (*Die Ursprünge des Handels und Wandels in Europa*), Jena, 1886. I here give a résumé of the results arrived at there, and take the opportunity of adding some fresh observations.

the Teutonic stock of words: Goth. *kaupon*, O.N. *kaupa*, O.H.G. *cuoufan*, A.S. *ceápian*, which expresses "the whole business of exchange" (buying, selling, trafficking). I believe I have shown on p. 88 of my book that we here have to do with early loans from the Latin, and that the oldest meaning of the Teutonic words was "doing business with a *caupo*;" especially as I cite the close analogies offered by the O.H.G. *mangâri*, A.S. *mangere*, O.N. *mangari*, "mercator," A.S. *mangian*, O.N. *manga*, "negotiari," &c., borrowed from Lat. *mango*. Again, the native Goth. *bugjan*, A.S. *bycgan*, which is not yet satisfactorily explained, have, besides the regular meaning of "buy," also that of "sell" (*cf.* the *Glossar zu Ulphilas von Gabelentz-Löbe*).*

Naturally, the terminology of exchange was increased by expressions derived from the fundamental notions of "give" and "take." Thus, on the one hand, Sans. *parâ-dâ*, "exchange," Lith. *parduti*, "sell," G. ἀποδίδοσθαι, O.S. *prodati*, "sell;" and on the other, Lat. *emo*, "buy"=Goth. *nima*, "take," Lith. *imù*, O.S. *ima*, I. *-em* (Bezzenberger).

It is, however, a natural consequence of all exchange, that in the course of time, and in various districts, those objects take a prominent position in commerce, which are desired by all alike, and which at the same time are adapted to become the standard of value for all other wares. After what has been stated above on p. 260, and in *Handelsgeschichte und Warenkunde*, p. 113, *ff.*, in more detail, it is impossible to doubt that as early as the primeval period, and also in the oldest times known to history, the cow was the special standard of value amongst the Indo-Europeans; and, indeed, this was only what was to be expected in the case of a pastoral people depending almost entirely on the produce of its herds. If we add to this, that a decimal system of reckoning, up to at least a hundred, had been developed—the terms for the numeral "thousand" diverge in different groups (Sans. *sahásra*, Zend *hazaṅra*, G. χίλιοι, Goth. *þusundi*, O.S. *tysąšta*, Lith. *tûkstantis*: *cf.* above, p. 125; Lat. *mille*, I. *míle*)—if we further reflect that there is a uniform identical designation in the Indo-Germanic languages (Sans. *mâmi*, *mi-mé*, G. μέτρον, Lat. *me-tior*, Lith. *miérà*, O.S. *měra*; *cf.* also Goth. *mitan*, G. μέδιμνος, Lat. *modius*, &c.) for the idea of "measuring" and "measure," for which primitive man undoubtedly employed, in the first place, the bodily measures afforded him by nature—finger and span, arm and

* These words have been last discussed by Max Müller, *Biographies*, p. 76, *ff.* He conceives the fundamental meaning of the A.S. *bycgan* to be "to bend or break off a piece from a coil of gold" (O.N. *baugr*: Goth. *biugar*, "bend"). But as "bending" is not "breaking," and as in paying by pieces from a coil everything turns on the latter, I cannot regard this explanation as tenable. It still seems to me more probable that Goth. *bugjan*, "buy" (*baúhta*), belongs to *biugan* (*báug*), "bend," in the same sense as G. πωλέω, ἐμπολάω, πωλέομοι does to πέλω, "twist," as Lith. *werczius*, "have commercial intercourse": Lith. *wertù*=Lat. *verto*, "turn;" so that the development of meaning was: "turn aside," "betake oneself," "hold intercourse," "hold commercial intercourse." See below.

arm's length ("ell," "fathom"), foot and pace—then it must be admitted that all the conditions necessary for a primitive system of exchange were forthcoming, even in the primeval period.

Our first concern here is the trade developed between members of one and the same tribe; but the question presents itself whether regular commercial relations with the members of foreign tribes, whether of Indo-European blood or not, are conceivable in the primeval period.

Primitive man only regards those who belong to the same tribe as himself as enjoying common rights with himself; the stranger is defenceless and has no rights; indeed, as stranger and enemy are identical in the views of the primeval period, it is a meritorious work to kill the stranger and offer him to the gods, or make a slave of him. This primitive morality can still be recognised tolerably plainly in the Indo-Germanic languages.

A friend is one who belongs to the sib or the tribe; O.H.G. *wini*, "friend," is connected with O.I. *coibnes*, "affinitas," *fine*, "the tribe;" Lat. *cīvis*, "the fellow-citizen" (*cīvis hostisque*, "friend and enemy"), belongs to the Teutonic stock **heiwa* (Goth. *heiwa-frauja*, "house-master," A.S. *hīwan*, &c.), the fundamental meaning of which evidently is "sib," "familia," and in Sans. *śīvá* has taken the meaning of "dear, charming, lovely, beloved;" finally, G. φίλος, "friend," is acutely, if boldly, compared to Sans. *sabhā*, "assembly," Goth. *sibja*, "sib" (**σφ-ίλος*), by Baunack (*Studien auf dem Gebiete des Griechischen und der arischen Sprachen von J. u. Th. Baunack*, i. 25, Leipzig, 1886).

In the opposite way, a series of words which in milder times have assumed the meaning of "guest," "guest-friend," undoubtedly had in the primeval period a much more sinister and threatening sense. Thus, G. ξένος (**ξεν-Fo-ς*), "guest-friend," originally meant "enemy," "foe," and is probably to be derived from Sans. *kshan*, *kshaṇóti*, "he injures;" the Slavo-Teutonic words, O.S. *gosti*, Goth. *gasts* are identical with Lat. *hostis*, *fostis*, "stranger," "enemy;" *hospes* (**hosti-pets*), "protector of strangers," first comes to mean "guest-friend." If we add to this, that even in ancient Teutonic times the slayer of a stranger was not pursued and banished, and that the foreigner could claim no *wer-geld* (Grimm, *Rechtsalterthümer*, p. 397, *ff.*); if we further consider how often in Indo-Germanic languages the idea of "unhappy, abandoned," &c., is expressed by terms derived from words for "homeless, sibless" (*cf.* O.H.G. *ellilento*, Eng. *wretch* = A.S. *wrecca*, "outlaw," Goth. *unsibjis*, G. ἀφρήτωρ, &c.), it must be admitted that the comparison, which I have recommended before now, of L. *aegi*, *aegid*, "guest" (*ποιγ), with O.H.G. *feigi*, O.N. *feigr*, &c., with the fundamental meaning of "moribundus," deserves attention.

The view entertained by the primeval period that the stranger had no rights, was not discarded as a principle until the teaching of Christianity. It was, however, at an early age tempered by the growing conviction that the stranger, as such, did indeed continue to be *exlex*, but that the divine ordinance (*fas*) made it a

duty—more and more recognised as a human law (θέμις)—to protect the life and property of the stranger, and receive him as a guest at the sacred fire of the hearth. What then is the historic relation of these two ways of looking at things—persecuting strangers and honouring strangers? What motives originated the ξενία of historic times and the ἄζενια of primitive ages?

I have endeavoured to give the answer to this question in my book *Handelsgeschichte und Warenkunde*, i. (1886), and to shew that it is probably merely the necessities of trade that awoke the conception of guest-friendship in the breast of man. In the exchange of presents, which is indissolubly bound up as a duty of θέμις with guest-friendship, I recognise a memory and a symbol of the exchange of wares, which was the occasion and the real object of guest-friendship connections.

Shortly after me, Rudolf von Ihering dealt with the same subject in the *Deutsche Rundschau* (1886–87, vol. iii. April–June 1887; *Die Gastfreundschaft im Altertum*, p. 357, *ff.*, 420, *ff.*).

It is a source of pleasure to me to have come to practically the same conclusion about this extremely important factor in ancient life as this scholar. He, too, gives as a main result of his investigation (p. 413): "The sentiment which summoned the guest-friendship of antiquity into being, and made it what it was, was not of a moral but a practical nature, not the disinterested love of humanity, but the selfish desire to make commercial intercourse possible and safe; without the safeguard of legal protection, international traffic in times when the stranger had no rights, would have been impossible." I further agree with Ihering that the form and character of the guest-friendship of the classical countries have been influenced by the example of the Phenicians—we may think of the σύμβολον of the Greeks, *tessera hospitalis* of the Romans, and the *chirs ælychoth*, "the sherd of guest-friendship," of the Carthaginians. Only I cannot go so far with Ihering as to regard guest-friendship as absolutely or exclusively the invention of Phenician trade. The institution of guest-friendship is by no means confined to Europe: it is found all over the globe, and in the most widely separated stages of culture (C. Haberland, *Die Gastfreundschaft auf niederen Kulturstufen*, p. 281, *ff.*, Ausland, 1878), and is nearly always bound up with the exchange of gifts between host and guest. It appears to me therefore quite possible, that the Phenicians, as soon as they arrived in Greece, found the inhabitants at any rate partially accessible to strangers whom it was their interest to do trade with.*

In the primeval Indo-Germanic period, at any rate, the stranger was regarded as a man without rights and as an enemy. This is to be inferred not merely from the linguistic evidence given above

* A totally different view, as we saw on p. 142, above, is taken by Leist, who in his new book, *Altarisches Jus Gentium*, too, "regards the peculiar and characteristic injunctions (amongst the Indians, Greeks, and Italians) of humanity towards guests, beggars, and suppliants as undoubtedly connected in their history."

but from numerous traces, left in history, of the ἀξενία of our forefathers, especially in the north (*cf.* on this, *loc. cit.*, p. 6, *f.*).

It might, therefore, appear as though it were impossible to talk of commercial intercourse between the Indo-Europeans and foreign tribes in the primitive period. But this conclusion would be erroneous. In addition to the trade which guest-friendship made possible, there are two yet more primitive forms of barter, which we may designate as dumb barter, and the beginnings of fairs. The former takes place when the one party deposits his wares at a certain fixed place and then withdraws, whereupon the purchaser appears, places his *quid pro quo* by the side of the wares exposed, and in his turn disappears as quickly as he can. If his equivalent is taken, the business is done; if not, the purchaser is bound to add to the goods he offers (Kulischer, *Der Handel auf primitiven Kulturstufen Z. f. Völkerps. u. Sprachw.*, x. 378, *ff.*). Fairs stand a stage higher. Two tribes agree that at a certain time in a neutral place war's alarms shall cease in the interests of trade. Weapons are laid aside, and the dealers come together under the protection of the fair's truce.

In spite, then, of the hatred of foreigners, and the fact that the stranger had no rights, the Indo-Europeans even of the primeval period may have carried on traffic with other tribes, though in a primitive and uncomfortable style, and in this way may have come into possession of the products of foreign culture (such as copper, honey, timber, &c.). This conclusion, that a certain amount of traffic, for purposes of trade, took place in the primeval period, finds support in philology. At any rate, it is remarkable that even in the original language one and the same root *per* must have been used to express both traffic and trade. The former notion is expressed in the Sans. *par*, *piparti*, "to transport," Zend *par*, "bring across," G. περάω, "travel through," so, too, πρήσσω (*Od.*, ix. 491) = *πρηκ-jω, Goth. *faran*, *fargan*; the latter notion is expressed in Sans. *paṇ*, *paṇatê*, "buy" (from *par-n*; Brugmann, *Grundriss*, i. 213), G. περάω, πέρνημι, πιπράσκω, I. *renim* (**per-nim*), *reccim*, "sell," Lith. *pir-kti*, "buy." It is probable, therefore, that the Indo-Germanic meaning of this root was "to go (away) on a journey, for purposes of barter."

O.H.G. *wantalôn*, "to hold intercourse": *wantalôd*, "vendit," *uuandelunga* "negotium," G. ἀμείβεσθαι: Lat. *mîgrare*, and others (*cf.* above, p. 349, note), are similar but belong to a later age.

We have seen above in ch. v. that the Indo-Europeans before their dispersion probably spent their lives on the steppes. The interruptions to commerce therefore consisted at that time not in the necessity of forcing a painful path through dense primeval forests, but mainly in the necessity of providing safe transit at fixed places across the rivers, by which we must conceive the original country to be traversed.

It is, therefore, not perhaps a mere accident that the Indo-Germanic word for ford: O.H.G. *vurt*, Celt. *-ritum*, Zend *peretu*, "bridge" (Lat. *portus*), G. πόρος, is derived from the root *per* just

mentioned. A ford therefore was originally "the place of crossing (mainly on business)." Again, the most widely spread Indo-Germanic word for path, Sans. *pánthas*, *pâthas*, Zend *pathan*, G. πάτος, Lat. *pons*, Osk. *pont-tram*, O.S. *pati*, Armen. *hun*, often takes the meaning of ford or foot-bridge,* as in Armenian and Italian; the direction of the roads on which the primeval people travelled may have been mainly determined by the position of the fords.

In this connection another question, of importance for the commercial life of the Indo-Europeans, presents itself, *i.e.*, whether we are to regard the primeval people, before their dispersion, as dwelling by the sea.

What is certain at any rate is that primevally related words for the sea appear for the first time in the European languages. Thus Lat. *mare*, Gall. *more*, I. *muir*, O.S. *morje*, Goth. *marei*, Lith. *mûres*; † and Lat. *lacus*, I. *loch*, O. Sax. *lagu*: Greek abstains from both equations. *Cf.*, further, G. ἅλς, Lat. *sălum*, I. *sál*, lit. "salt" (*cf.* above, p. 318, *f.*).

This suggests that the Indo-Europeans before their dispersion were not in contact with the sea. The circumstance that we have to picture Indo-European navigation to ourselves as in a very rudimentary condition, agrees with this. There are only two things, in the matter of navigation, which have identical names in Europe and Asia: they are, rowing (Sans. *arítras*, *arítram*, G. ἐρέτης, ἐρετμός, τριήρης, Lith. *ìr-ti*, *ìr-klas*, I. *rám*, Lat. *rēmus*, *trirēmis*, *ratis*, O.H.G. *ruodar*, &c.), and that which was rowed, the boat (Sans. *náu*, O. Pers. *nâvi*, Zend *âpô nâvayâo*, "navigable rivers," ναῦς, Lat. *navis*, O.I. *nói*, Armen. *nav*, M.H.G. *naue*, O.N. *naust*, "moorings"). I have endeavoured to show above on p. 278, that the later stock of words in the primitive period designated nothing more than a tree-trunk hollowed out, a so-called "dug-out." When, however, we call to mind the extent to which the terminology of wagon-building—an art near akin to that of boat-making—was developed even in the primeval period (p. 339), we cannot but ascribe a certain weight to the silence of philology in this instance. It is in the European languages that a uniform designation is to be found first for a new portion of the ship, the mast: O.H.G. *mast*, O.N. *mastr* = Lat. *mālus* (**mazdo*). For the rest, here too there is great divergence in the names for such things as sail, yard, anchor, helm, keel. As a rule fishing appears in close conjunction with the beginnings of navigation, indeed often is the starting-point of it. It must, therefore, be once more insisted upon that in the vocabulary of the original Indo-European language there is neither a collective term for the general notion of fish, nor an individual name for any particular

* As the stock of words mentioned belongs to root *pent*, "to go" (O.H.G. *fendo*, "pedestrian"), then "to find" (Goth. *finþau*, I. *étaim*), so I. *áth*, "ford," is to be connected with Sans. *at*, *át-ati* (*á* : *a*), "go."

† The inclusion of Sans. *árṇa*, *arṇava*, "wave, flood" (Bury, *B. B.*, vii. 341), is very unsafe.

kind of fish* (*cf.* above, pp. 118, *f.*, 317). Nor can primitive names for the directions of the wind, which would need to be carefully distinguished for purposes of navigation, be discovered, except the uncertain Lat. *caurus* = Lith. *sziaurýs*, O.S. *severŭ*, "north wind."

To this must be added the fact which I have set forth in detail in *Handelsgeschichte und Warenkunde*, i. 43, *ff.*, that linguistic evidence shows the higher development of navigation to have taken place in historic times amongst the European members of the Indo-Germanic family, and to have originated in two parts of our quarter of the globe, where the geographical conditions were such as of themselves to foster the evolution of shipping. The two places are—first, the east coast of the Balkan Peninsula and the island world of the Ægean Sea, occupied by the Greeks; second, the sea-board of the Baltic, the ancient home of the Teutonic tribes. As the Greeks taught the south of Europe their nautical terminology, so in the north the Teutonic world gave many hints in this subject to the Romance peoples on the one hand, and on the other to the Finnish, Lithuanian, and Slavonic tribes; which, again, in another direction betray the influence of the Græco-Byzantine marine, and thus in a way complete the circle.

* Here, again, it is only when we come to European that we find: Lat. *piscis*, I. *fasc*, Goth. *fisks*, G. ἰχθύς = Lith. *żuvis*. But in Indo-Iranian we have Sans. *matsya* = Zend *masya*; *cf.* also Goth. *nati* = Lat. *nassa*, "net."

CHAPTER XI.

THE CULTURE OF THE INDO-EUROPEANS AND THE PREHISTORIC MONUMENTS OF EUROPE, ESPECIALLY THE SWISS LAKE-DWELLINGS.

General Character of the Swiss Lake-Dwellings—Oldest Stations—Metals and Weapons—Cattle-Breeding; Domestic Animals—Agriculture—Food—Clothing—Dwellings—Pottery—Wagon-Building and Ship-Building—Ethnological Conclusions.

HAVING in the previous chapters sketched the most salient features of the material civilisation of the Indo-Europeans, we wish, before passing to their moral culture as disclosed in the family, state, and religion, to make a brief pause, in order to compare the the results which we have thus far obtained from philology and history with the stage of human culture brought to light in our own quarter of the globe by the archæologist's pick and shovel. For the purposes of such a comparison, however, there can be no doubt the most extensive material, comprising as it does all phases of an original civilisation, is offered, more than by any other prehistoric monuments in Europe, by those dwellings which are called "pile-dwellings" from their mode of structure or "lake-dwellings," and which have been discovered in larger and larger numbers in East and West Switzerland (though not confined to this country) since the year 1853, when attention was first attracted to them owing to the lowness of the water in the lakes. In the opinion of those best acquainted with the lake-dwellings there is no reason to imagine that new and unlooked for discoveries will contradict the results of the investigations already made and compel us to make any essential corrections in the picture we are now warranted in forming of these ancient settlements. We may, therefore, conclude that we have this little world of ancient culture in all material points now before us.

Nevertheless for our purpose difficulties are forthcoming from another quarter. The number of the Swiss lake-dwellings steadily increased for centuries, and the presence of different stages of culture in them has never been disputed; but, whereas, at one time it was explained as the result of frequent changes of population, now the tendency is to regard it as the outcome of the development in successive ages of one and the same people's

civilisation. The differences in the various stages of culture manifest themselves in various ways, but most clearly in the metals employed by the lake-dwellers. There are settlements in which the inhabitants are entirely in the pre-metallic age; some in which pure copper appears, others in which bronze makes its appearance—and there are evident indications that both metals were worked on the spot—and finally there are not wanting settlements which betray the existence of a developed manufacture of iron.

Under these circumstances it is clear that for our object we must start from those settlements which show themselves alike by the artificial objects found in them, and by the plant and animal remains they contain to be the oldest representatives of the civilisation deposited in the lake-dwellings. Thus treated the formidable number of lake-dwellings melts away considerably, and there are only left to represent the class described: the lake-dwellings in Lake Moosseedorf, the pile-structure at Wangen on the Bodensee, and the fascine structures at Wauwyl, to which may then be added, as perhaps of more recent date, the pile-structure in Pfäffikon Lake at Robenhausen and the settlement of Niederwyl. It is then the state of culture shown by these remains that will form the basis of our investigations. Their scientific description is to be found in the reports on the lake-dwellings (*Mittheilungen der antiquarischen Gesellschaft in Zürich*, i.–xii.) by F. Keller, the original discoverer of the lake-dwellings and the careful compiler of the finds. He found a most fortunate and zealous co-operator, especially for the west of Switzerland, in V. Gross (*Les Protohelvètes ou les premiers colons sur les bords des lacs de Bienne et Neuchatel*, Berlin, 1883). For judging the animal remains of the lake-dwellings, Rütimeyer's book, *Die Fauna in den Pfahlbauten der Schweiz*, Zürich, 1865, is of most importance, for the plant remains Heer's treatise, *Die Pflanzen der Pfahlbauten*, Zürich, 1861. The best course for us to follow in our account will be that observed by us when describing the culture of the Indo-Europeans.

A. Metals and Weapons (*cf.* part iii. ch. x.).

We came to the conclusion on p. 239 that the primeval Indo-European period was still practically in the Stone Age, and that the only metal known was pure copper. Whether, and how far, this metal was employed in the production of isolated weapons (swords) and implements as well as ornaments, was a question to which philology and history seemed scarcely able to give a decisive answer.

Similarly, in the three first-mentioned lake-dwellings, not a trace of any metal whatever is to be found. On the other hand, stone and bone implements were yielded by the Lake-dwelling of Wauwyl to the number of about 500, of Moosseedorf more than 3300, and of Wangen not less than 5800 (Lubbock, *Prehistoric*

Times, p. 194). Now, whereas previously the general opinion was that the Stone Age thus brought before us was immediately succeeded by the use of bronze instruments, partly manufactured *in loco*, partly imported from abroad, more recent finds, as we must repeat, have shown more and more clearly that the use of unmixed raw copper intervened between that of stone and that of bronze. Thus in Robenhausen, which otherwise belongs to the Stone Age, a copper axe and melting-pot have been found; and articles of copper such as axes, daggers, fish-hooks, arrow-heads, hammers, &c., have been found not only in the lake-dwellings of Switzerland, but also of Upper and Lower Austria, as also in Bohemia, Moravia, Hungary (for which a copper period had been previously assumed), in North Germany, on the Rhine, &c., in such numbers that M. Much, in his already mentioned book, *Die Kupferzeit in Europa und ihr Verhältniss zur Kultur der Indo-Germanen*, Wien, 1886, altogether denies the existence of a purely neolithic Stone Age in Europe (p. 183), and considers that copper was used, not only for ornaments but also for weapons and tools, right through the so-called recent Stone Age, by the side of stone and bone implements (p. 181).

I am not in a position to pronounce an opinion as an expert on the truth of this view. I can only point out that, should it be confirmed, this is not inconsistent with what has been discovered about the primeval Indo-Germanic period; for in any case the number of copper finds made within the limits of the Stone Age are relatively so small, that they cannot materially affect its substantial character as a non-metallic age.

In the case of weapons, to which we now proceed, we found that the primeval Indo-Germanic period was absolutely destitute of weapons of defence (except perhaps for shields of wood or leather), but possessed on the other hand, in the way of offensive weapons, bows and arrows, clubs, hammers, axes, sling-stones, lances, and a short fighting knife.

The state of things in the most ancient lake-dwellings is exactly analogous. Of defensive armour, such as helmet and corselet, there is naturally not a trace; nor have I ever come across the mention of a shield, but this, in view of the perishability of wood, may be accidental. As for offensive weapons, Wauwyl alone yielded 43 stone axes, mostly of serpentine, 36 small flint arrow-heads, 200 flint flakes (for lance-heads or fighting knives), 20 unwrought stones used as hammers, 85 sling-stones (Lubbock, *loc. cit.*, p. 196; *cf.* also p. 13). In the same way Moosseedorf offers numerous knives, saws, lances, and arrow-heads of flint (Report ii. 119). Many specimens of oak clubs have been found in Wangen (Report ii. 146), Robenhausen (Report v. 169), Meilen (Report i. 78). Two bows of yew, 5 and 3½ inches long, were discovered at Robenhausen (Report v. 169). On the other hand, I have only found lance-shafts of oak, from 6 to 8 inches long, mentioned in Nidau (Bronze Age); Report ii. 146.

We have yet to mention a much-discussed fact in connection

with the lake-dwellings. Amongst the articles of stone found, a not insignificant number of objects have long occupied the attention of geologists and historians of culture alike. They are stone wedges, stone axes, and one knife-blade, which are made, not of stones native to Switzerland or neighbouring countries, but of nephrite, jade, and chloromelanite, minerals closely related to each other, but belonging, in the opinion of numerous geologists, to formations which never occur in Europe, and are principally found in Asia. Granted that this opinion is correct, these remarkable finds admitted of being explained in one of two ways. Either they were regarded as evidence of a primeval and far-reaching trade between the lake-dwellings and the eastern sources of nephrite, for which a parallel, though scarcely an adequate one, was found in the circumstance that flints worked in Switzerland frequently came from fairly distant quarters (the south and centre of France). Or the articles of nephrite were considered to have accompanied some tribe of man that had migrated from the interior of Asia to Europe. The latter view was upheld particularly by H. Fischer, who has devoted to it an extensive volume (*Nephrit und Jadeit nach ihren mineralogischen Eigenschaften sowie nach ihrer urgeschichtlichen und Ethnographischen Bedeutung*, 2 Aufl., Stuttgart, 1880). Max Müller takes the same standpoint in his *Biographies of Words* (Appendix ii., "The Original Home of Jade").

Only in recent times, totally different conclusions have been reached, mainly owing to the researches of A. B. Meier (*Die Jadeit und Nephritobjekte aus Asien, Oceanien, und Afrika*, 1883). It is becoming more and more clear that articles made of nephrite are distributed over nearly the whole earth, that the raw material occurs both in Europe (in the "Leipziger Sandgrube" a piece of 38 *ko.* was found) and in America, and that Asiatic nephrite never completely agrees in structure with the European. In fine the polytropic origin of the minerals in question has increased in probability.* Here, again, the philologist is not permitted a definitive opinion: he can only point out that, in the present stage of the question, the presence of nephrite in the lake-dwellings should not be employed to prove ethnological conclusions, of any kind, as Max Müller has endeavoured to use it most recently.

B. Cattle-Breeding, Domestic Animals (*cf.* above, ch. iii.).

The foundation of Indo-Germanic economy was cattle-breeding. The most ancient group of domestic animals consists of the cow, the sheep, the goat, and the dog. The pig and the horse were also known; but it is probable that the domestication of the pig, in which the Aryans originally took no part, did not take place until after the separation of the Indo-Europeans, and after the time when the European peoples, still closely connected together, had made some advance in the way of agriculture and permanent settlements.

* A short résumé of the nephrite question is given by A. Rauber, *Urgeschichte des Menschen*, i. 34, *ff.* (1884).

As regards the horse, the most probable thing is that herds were bred in a half-wild condition in folds. The ass, mule, cat, and all kinds of poultry were still wanting.

The state of things we encounter in the lake-dwellings in this respect is surprisingly similar. Here, too, in the oldest times the reliable contingent of domestic animals consisted of the cow, the sheep, the goat, and the dog. Rütimeyer (*loc. cit.*, p. 119, *ff.*), recognises two varieties of the wild-pig, the ordinary wild-boar, and what he calls "the marsh variety." No traces of the domestic pig were to be found in Wangen and Moosseedorf; the first signs of the domestication of the pig—and that the marsh-pig—manifest themselves in later lake-dwellings in ever-growing quantities, in Wauwyl and Robenhausen. Rütimeyer believes that from these facts he may draw the conclusion "that in the oldest lake-dwellings the pig as a domestic animal is not forthcoming, but that in the later periods of the Stone Age it does appear, and in ever-increasing numbers."

Remains of the horse, of our modern domesticated variety, have been detected beyond a doubt in the oldest lake-dwellings; the only thing remarkable is the frequency of other domesticated creatures' bones compared with the uncommon scarceness of this animal's. The significance of this fact is uncertain (*cf.* Rütimeyer, *loc. cit.*, p. 123). In any case it is clear that the horse must have taken a different position in the economic life of the lake-dwellers from that of the cow, sheep, and goat.

The ass (except for one perfectly isolated find; Report vii. 50), the mule, the domestic cat* (Rütimeyer recognises the wild-cat, *loc. cit.*, p. 23), and poultry certainly were not amongst the animals bred by the most ancient lake-dwellers. *Cf.* the table on pp. 360, 361.

C. Agriculture (above, ch. v.).

For the oldest epoch of the primitive Indo-European period no indications, or extremely few, can be found to show that agriculture was followed at the same time as pastoral life. On the other hand it is indubitable that the European peoples were still in close contact with each other at a time when important advances had been made by them in the matter of agriculture. There is some probability that they cultivated wheat, barley, and millet; flax, but not hemp; in the way of leguminous plants, perhaps peas and beans; of liliaceæ perhaps the onion; but the last two may be regarded as by no means certain. The cultivation of fruit-trees was unknown to the primeval period.

So, too, the oldest lake-dwellers tilled the soil to a certain extent. The species of grain that have been found are, however, taken to imply that they were grown in forest soil that had not long been cleared, and was still poor in the Bronze Age

* The mouse—the field-mouse, not our house-mouse—has been detected (Rütimeyer, *Fauna*, p. 24).

DOMESTICATED ANIMALS IN THE MOST ANCIENT PERIODS.

	Periods inferred from Languages.				Historic.
	The Finns on reaching the Baltic.	The Turko-Tatars.	The Original Semites.	The Primitive Indo-Europeans.	The Sumerians.
Cattle.	known.	Alt. *öj*, Vig. *öt*, &c.	*bakaru*, *tauru*.	Indo-G.	*gud*.
Goat.	...	...	*ḫnzu*.	Indo-G.	*ḫz*.
Sheep.	...	Turk. *kojun*, Cag. *koj*, &c.	*kabsu*, *rahilu*.	Indo-G.	*udu*.
Dog.	Finn. *penikka*, Esth. *peni*, &c.	*it*, *ét*, *ut*.	*kalbu*.	Indo-G.	*tikku*.
Pig.	...	...	...	European.	...
Horse.	known.	*at*.	*paraśu*, *sûsu* (?).	Indo-G.	...
Ass.	...	*ešek*, *ešik*, *ešik*.	*ḫimâru*, *atânu*.	...	*ansha*.
Mule.	...	Turk. *katir* (?).	...	...	...
Camel.	...	Vig. *töbe*, Cag. *töve*, &c.	*gamalu*.	...	...
Cat.	...	...	...	...	...
Fowl.	...	?	...	...	...
Goose.	...	?	...	...	...
Duck.	...	?	...	...	...
Dove.	...	?	...	...	*tu*.
Expresses doubt as to the domestication of the animal in question.	*Cf.* Ahlqvist, *Die Kulturwörter in den westfinnischen Sprachen*, Kap. i.	*Cf.* H. Vambéry, *Die Primitive Kultur des turko-tatar. Volkes*, p. 188, *ff.* Very unsafe, see p. 46 above.	*Cf.* A. v. Krémer, *Sem. Kulturentlehnungen*, Ausl., 1875, p. 1, *f.*; F. Hommel, *Die Namen d. Säugetiere b. d. Südsemiten*.	*Cf.* above, ch. iii.	*Cf.* F. Hommel, *Die vorsem. Kulturen*, p. 400, *f.* In the way of domestic birds, Hommel mentions the raven and swallow as well as the dove.

(Möringen); Report vii. 65. In the oldest times, three kinds of wheat, two of barley and of millet, were cultivated. Rye and oats were entirely unknown, and do not occur until the later dwellings of the Bronze Age, *e.g.*, in Möringen (Report vii. 63). Whilst hemp was entirely unknown (Christ in Rütimeyer's *Fauna der Pfahlbauten*, p. 226; Report vii. 65), flax was grown in the oldest times. Heer's view that the species of flax cultivated was the *linum angustifolium*, and therefore implies importation of flax-seeds from the coasts of the Mediterranean, is opposed to that of the botanist Christ (*loc. cit.*, p. 226), who on the contrary regards the flax of the Swiss lake-dwellings as a variety indigenous to Central Europe (*cf.* also W. Helbig, *Die Italiker in der Poebne*, p. 67). Of other field and garden fruits, the pea alone occurs in the Stone Age (Moosseedorf); beans, lentils, and the garden-poppy appear in the Bronze Age (Report vii. 63, 64). The grains found are exclusively summer crops (Report vii. 65). I have never found the cultivation of the rape or onion mentioned. The vine is wanting: in its place we have the so-called "virgin's bower" (*clematis vitalba*), which was used for basket-work.

OF THE INDO-EUROPEANS AND NEIGHBOURING PEOPLES.

Epochs.				Swiss Lake Dwellers. Stone Age.		Bronze Age. Nerau.	First appearance of domesticated animals
Indians of the Rig-Veda.	Iranians of the Avesta.	Greeks of Homer.	Pile-Dwellers of the Plain of the Po.	Wauwyl.	Moossedorf.		
pâ, pâçu, dhana, &c.	*pâçu.*	*δῶες.*	very common.	very common. known. occasional.	very common. known. known.	very common. common. common.	...
avi.	*hâira.*	*αἶξ.*	known.				...
dvi, avi.	*maêsha.*	*ὄις.*	less known.				...
gâus.	*gâo.*	*βοῦς.*	two species.	known.	known.	known.	...
...	...	*ὑς.*	common.	doubtful.	...	common.	Prehistoric.
âçvas.	*aspa.*	*ἵππος.*	two species.	known.	doubtful.	common.	
gardabha, âsabha.	*khara.*	*ὄνος(?).*	very doubtful.	...	...	...	After Homer and Hesiod. Pre-Homeric.
...	...	*ἡμίονος.*	...	...	...	...	...
...	*ushtra.*	...	...	...	...	...	...
...	...	...	...	...	...	...	Absent 480 A.D. in Italy. Time of Pherecydes 2d half of 5th century.
kyavîka.	*parôtara.*	...	...	...	...	...	
...	...	*κύων.*	...	...	...	...	
...	...	...	...	...	...	...	
...	...	...	...	...	...	...	Beginning of 5th century among the Greeks.
Cf. H. Zimmer, *Altind. Leben*, p. 221, *ushtra* is a buffalo-bull. "Mule" *agvatara* does not yet appear in the Rigveda (?).	*Cf.* W. Geiger, *Ostiran. Kultur*, p. 343 *f.*	...	*Cf.* W. Helbig, *Die Italiker in d. Poebene*, p. 14. The differences are determined by the quantity of the bone-remains of the various species found.	*Cf.* Sir John Lubbock, *Pre-historic Times*, p. 202; also Rutimeyer, *Die Fauna der Pfahlbauten.*			*Cf.* V. Hehn, *Kulturpflanzen und Hausthiere*, 8 Auflage.

"The only variety of fruit-tree known, the wild-apple, teaches us that the cultivation of fruit-trees was absolutely unknown" (Report vii. 65). Implements clearly designed for agricultural purposes have not yet been brought to light. The archaeologists (*cf.*, *e.g.*, Report iii. 112), therefore, conjecture that bent tree branches still filled the place of the plough. *Cf.* what has been said above, p. 287, about the Indo-European plough.

D. Food (above, ch. vii.).

The food, at any rate, of the European members of the Indo-Germanic family was—in accordance with the two foundations of their domestic economy, cattle-breeding and agriculture—a combination of animal and vegetable diet. They enjoyed the flesh of their herds, and also perhaps, in a secondary degree, of beasts of chase. The art of roasting on spits was known. Common names exist for greasy broth, and for the marrow of bones, which is still a dainty with Homer. Fish seems to have been despised as food.

In the way of wild vegetable food the ancient Germans used the fruit of uncultivated varieties of trees. There is evidence of the use of acorns as food amongst the Greeks.

As agriculture advanced, cereals more and more came to be used as the support of life. The art of pounding the grain and grinding it with a hand-mill was known. Roasting and baking had been invented; but how far they had been developed is doubtful.

In this department of culture also the picture presented by the oldest lake-dwellings coincides with perfect accuracy, with one remarkable exception soon to be mentioned. Here, too, the first place is taken by the flesh of animals of the chase and of domesticated animals (here in this order). "A constant characteristic of his (the lake-dweller's) cuisine is the fact that all bones containing marrow or other edible contents are greedily despoiled even of this scanty content" (Rütimeyer, Reports iii. vii., note 1). To meat—as to the preparation of which I have found no information—fish must be added as an undoubted element of the lake-dwellers' diet; and herein for the first time we come across a point of no small importance, which, according to our view, has nothing to correspond with it in the primeval history of the Indo-Europeans. In the way of vegetables, carbonised wild-apples (and also pears) have been found in some quantity in the Swiss lake-dwellings. They were cut in pieces and apparently stored for winter consumption (Lubbock, *Prehistoric Times*, p. 217). Acorns cut in two, pared, and burned were found in Möringen (Report iii. 63). In the pile-dwellings of the Po, also, acorns were found in large quantities stored in earthern vessels; so that it is probable "that they were intended not as mast for swine but as food for human beings" (Helbig, *loc. cit.*, p. 17).

Finally, the information as to the use of cereals, which were ground by stone corn-crushers, is put together by Lubbock (*loc. cit.*, p. 216) as follows: "Still more unexpected was the discovery of bread, or rather cakes; for their texture is so solid that leaven appears not to have been used. The cakes were round and flat, from 1 to 15 lines in thickness, and had a diameter of from 4 to 5 inches (according to Heer the crushed mass was made into a paste and baked between two stones). In other cases the grains seem to have been roasted, coarsely ground between two stones, and then to have been either stored in great earthern vessels or slightly moistened and eaten." *Cf.* also Heer, *Bemerkungen über die Landwirtschaft der Ureinwohner unseres Landes*, Report iii. 111, *ff.*.

E. Clothing (*cf.* above, ch. viii.).

The Indo-Europeans were no longer limited as regards clothing to the hides of animals, however much these may have survived in the costume of historic times. The arts of plaiting, spinning, and weaving were known, though to what extent is doubtful. Still, a term for spindle may have existed in the original language,

and philology indicates that the Indo-Europeans were acquainted with a primitive weaving apparatus. Their materials were sheep's wool and flax, which along with other cultivated plants was known to the European members of the Indo-Germanic family.

In form the original dress was extremely primitive. It consisted probably of nothing more than a piece of woollen or linen stuff shaped like a hide: it was fastened at the shoulder with a thorn, and may have been confined by a girdle at the waist.

Sewing was known.* Shoes were in use. Ornaments were worn.

Turning to the culture of the lake-dwellers we find that here too the arts of winding, plaiting, spinning, and weaving had been developed to a certain extent. The practice of the first two arts is shown by numerous strings and cords manufactured by twisting together thin twigs, rushes, reeds, straw, &c. Mats made out of strips of bark have also been found. The most important thing, however, in the industries of the lake-dwellers was the flax they grew, which was found not yet made up in Wangen and Robenhausen. That the art of twisting it together into a thread was understood is rendered probable by the discovery of quantities of clay in spindle whorls †, on the one hand, and is directly proved on the other by the bundles of yarn and thread discovered in Robenhausen. These constituted the material for the manufacture of the by no means infrequent pieces of linen, which again were found in Robenhausen. Some of these showed no advance on basket-work. "They consist," so runs the description of one of them, "of thin cords of flax (made two strands twisted together) lying parallel together (the warp). Across and through these cords similar cords of flax are twisted, at a distance half an inch from each other (the woof). The whole makes not indeed a thick and stiff, but for all that a very tough piece of basket-work." Other pieces of stuff again betray greater skill, and cannot have been produced, in the opinion of experts, without some kind of simple weaving apparatus, such as the Zürich riband manufacturer Paur has constructed by way of experiment. *Cf.* on the whole question the appendix, *Flachsindustrie auf den Pfahlbauten*, Report, iv. 14, *ff.*

Woollen cloth has not as yet been found in the lake-dwellings, although the sheep is one of the animals domesticated by the most ancient lake-dwellers (Rütimeyer, *Fauna*, p. 127, note)—a second instance of discrepancy with the hypothetical culture of the Indo-Europeans.‡ The rags that have been discovered teach us nothing

* Sans. *sîv*, G. κασσύω, Lat. *suo*, Goth. *siujа*, O.S. *šija*, Lith. *siúvju*.

† In some the spindles were still sticking (V. Gross, *Les Protohelvètes*, p. 101).

‡ Nevertheless, Herr M. Much writes to me on this subject: "Wool is a material which only survives for any length of time under peculiar circumstances: as a rule it perishes, and that very speedily. If its absence in the finds from the burying-fields of Hallstadt were to be made a criterion of the weaving of the time, there would be but very scanty indications of anything of the kind. As it is, however, a not inconsiderable quantity of woollen stuff was found in 'the Old Man' of the Hallstadt salt-mine. Its preservation is due to

of course as to the shape of the dress. Keller only remarks (*loc. cit.*, p. 20): "That close examination of the woven articles had revealed to him only one single instance of a hem made by the aid of a needle, and never a seam or the least indication that the stuff had been cut out, and this suggests the conjecture that these fabrics were rather employed as wraps generally than intended to fit separate parts of the body."

The nature of the leather remains, which only permit us to conclude with certainty that they were artificially prepared, allows of no conjecture as to their original purpose (Report iv. 23).

F. DWELLINGS (*cf.* above, ch. ix.).

During the wanderings of the Indo-Europeans the wagon was at once carriage and house to them; on the other hand, during their settlements, which came to be longer and longer the more they turned from pastoral to agricultural life, two kinds of habitation can be traced back to primitive times—the hut and the subterranean dwelling dug in the earth. In connection with the former there can be no doubt that we must keep our minds clear of any idea of stone buildings, and conceive the materials as simply basket-work, wood, and loam. As to the form of the Indo-European hut, it seems to have originally been circular, although possibly even in the primeval period rectangular buildings of the block-house kind were not excluded. The entrance to these habitations was by a door. Windows did not exist.

The attempt to draw comparisons from the lake-dwellings here encounters almost insuperable difficulties, for the simple fact that the fire, which has destroyed most of the lake-dwellings, or the other elements which have contributed to their destruction, have left nothing but the piles on which the huts stood. In Report ii. p. 135, F. Keller gives the following conjectural description of the lake-dwellers' huts: "Thus much is certain, that the walls were perpendicular poles with withes woven in and out between them; and that to keep out the wind and the rain a layer of clay, 2 or 3 inches thick, was spread over this basket-work both inside and out. That the ground-plan of many huts was circular is beyond all doubt . . . . . on the floor in the interior of the hut, also, clay was spread, forming a sort of flooring and a good foundation below. In the middle of the hut was a sort of hearth made of rough slabs of sandstone. The roof, which in the circular huts was conical, consisted doubtless of bark, straw, and rushes, remains of which have been found in the mud in several places." Only more recent investigations seem to have shaken the assumption

the fact that it was saturated with salt and completely imbedded in the clay-salt, so much so that these woollen fragments look quite modern and have even retained their colour to a certain extent. All these stuffs are of sheep's wool. In the graves they had utterly disappeared, although the position of the brooches on the skeletons points to the inference that the corpses were buried in their clothes. Comparison with the marks left on the rust of iron objects then showed that their clothes had consisted of exactly the same woollen stuff as came to light in the choked up shafts and galleries of the Old Man."

that the lake-dwellings were circular; and the eighth Report, p. 6, pronounces in favour of a rectilinear arrangement of the walls as necessitated by the construction of the foundations.

Under these circumstances we may be permitted to leave the lake-dwellings for a moment and turn our eyes to a series of other monuments which are of undoubted importance for the history of the European house. I mean the so-called "house-urns" which have been discovered in Italy, Germany,* and Denmark, and which in spite of many differences of detail yet resemble each other in the important points that, "as a receptacle for the remains gathered from the funeral pyre, an earthern vessel of the shape of a house was employed, and that this house always possessed a large practicable door which could be closed from without by means of a cross-bar" (Virchow, *Ueber der Zeitbestimmung der italischen und deutschen Hausurnen, Sitzungsberichte d. Akad. d. W. zu Berlin*, p. 1008, 1883).

As for their appearance, Helbig (*Die Italiker in der Poebne*, p. 30) describes the Latin "house-urns" of the necropolis of Alba Longa as follows: "The urns represent roundish huts, the walls of which we must imagine to be composed of loam, twigs, or other perishable material. The roof seems to have consisted of layers of straw or reeds, and to have been held together by ribs, which in the real house obviously were made of wood. The compluvium-characteristic of the later Italian house is wanting. To let light in and smoke out, the doorway seems to have served instead—and also a small triangular sort of dormer-window, which is shown by some of these burial-urns in the front slope of the roof, by others in the back."

As regards the German urns also, both those shaped like a bee-hive or an oven, and the real house-urns, Lisch, who first examined these antiquities scientifically (*Jahrb. d. Vereins f. Mecklenburg. Geschichte*, xxi. 249), comes to the conclusion that the circular was the original form of these urns. "A glance over these urns suffices to make one involuntarily see that in their shapes we have the evolution of the ancient dwelling-house traced before us. The oldest form of house, undoubtedly, is given by the urns from Burg-Chemnitz and Rönne, which have the door in the roof, as is the case frequently in the dwellings of primitive peoples for the purposes of protection against wild beasts;† the occupant entered by means of a ladder which he pulled up after him, and thus had a defence the more in the steep, smooth walls. Those round houses which have the door in the wall,‡ like the urns of

* The last in the spring of 1887 at Unseburg. Cf. *Magdeburgische Zeitung* (Beiblatt) of 7th January 1889.

† Perhaps it is more probable that the portion of the house below the door in the roof is to be supposed to be dug in the earth. *Cf.* below on the Mardell.

‡ The closest resemblance to this type (Lisch, p. 247) is afforded by the barbarians' houses on the triumphal column of Marcus Aurelius, except that their doors—there are absolutely no windows here either—are longer and narrower than in the urns.

Kiekindemark and Klus, are certainly younger. The youngest is represented by the urns from Aschersleben: this house was rectangular, with a tall, steep roof of straw, a striking prefiguration of small country cottages of the present day." Various hypotheses have been put forward to bring the Italian and German house-urns into direct connection with each other: borrowing from Italy, and on the other hand a Teutonic origin for the Italian antiquities, have both been suggested. However, I consider Lisch's view that these house-urns are the independent creation of the two peoples, and that they are an expression of the type of European hut inherited from primeval times as still the most probable.

To return to the lake-dwellings, the custom of using piles for the foundations of huts is, as is well known, by no means to be considered as confined to these prehistoric structures. I will not reiterate the often-discussed analogies to this kind of building, which are to be found amongst the most widely separate peoples (*cf., e.g.*, Lubbock, *Prehistoric Times*, p. 181, *ff.*). I will only intimate that R. Henning in his above-mentioned book, *Das deutsche Haus*, shows that pile foundations were specially frequent in Frankish and Upper-German territory. "These lofty, wooden structures on which the houses rest, afford an interesting parallel to the lake-dwellings of Moore and the Swiss lakes" (p. 170).

Finally, there is a steadily growing tendency to identify the subterranean dwellings, which we have already mentioned, and the occurrence of which amongst Indo-European peoples is supported by abundant literary evidence, with certain monuments in Europe, especially with the so-called "funnel-pits" or "mardelle." Their character as dwelling-places has been most recently discussed by F. S. Hartmann (*Zeitschrift für Ethnologie*, xiii. 237, *ff.*, 1881), with especial reference to southern Bavaria. According to Hartmann, as a rule they exhibit a circular form, are from 2 to 4 metres deep, and have a radius of 11 to 15 metres. They seldom run into a funnel-shape: they are generally basin-like excavations, as a rule being merely the foundations of the dwellings, while above them rose the huts, which were naturally round, but as to the construction of which nothing more is known. A very interesting find of this description, as Herr M. Much informs me, has been made in the prehistoric settlement in the so-called *Turks' Redoubt* at Lengyel, not far from Fünfkirchen in Hungary. Here, subterranean dwellings are dug in the solid earth. "They are circular, not much higher than a man can stand in; the entrance was through a small opening, probably by means of a perpendicular climbing pole. In the floors of the excavations, remains of pottery, weavers' weights, and the traces of cattle were found."

"Funnel-pits" of this kind have been discovered not only in Germany, France, and England, but also in Switzerland (Hartmann, *loc. cit.*, p. 242), and as it may be regarded as at least very probable that, when the Swiss lakes were populated by lake-dwellers, the dry land was inhabited at the same time, we may

very well picture to ourselves the pile-dwellings in the lakes and the funnel-pits on the land as existing together.

G. Pottery, Wagon-Building, and Boat-Building.

That the potter's art was practised, not without the aid of the potter's wheel indeed, in the most ancient lake-dwellings is known. It must also be supposed to have been known to the oldest culture of the Indo-Europeans. True, we have but fragments of a primitive verb expressing the action of the potter (Goth. *deigan*, "to make of clay" = Lat. *figulus*, "potter," *fingere*, technical term for the potter's work; Sans. *dih*, "rub over, bedaub, besmear"); but the Indo-Europeans must have been acquainted with it, as is shown by a not inconsiderable number of common names for vessels. The most important are: Sans. *carú*, O.N. *hverr*, I. *core*, "kettle," Sans. *kumbhá*, "pot" = G. κύμβος, Sans. *gôla*, "ball-shaped water-jug" = G. γαυλός, "milk-pail," Zend *tashta*, Lat. *testa*, Lat. *vas* = Goth. *kas*, *kasja*, "potter," O.N. *biđa*, Lat. *fidelia*, G. πίθος (*B. B.*, iii. 97), I. *cilörnn* (**kelpurno*), Lat. *calpar*, G. κάλπη, κάλπις (Stokes, *K. Z.*, xxx. 558). Again, the potter's art amongst all Indo-Europeans stretches back, enveloped in myth and story, to the remotest times; above all, in matters of ritual, the exclusive employment of earthern vessels was long retained both in Greece and Italy.

As for wagon-building, which had been carried to a certain degree of perfection in the primeval Indo-European period, nothing analogous is offered by the lake-dwellings; extremely few objects have been found in the older stations (*e.g.*, a yoke in Fenil; Gross, *Protohelvètes*, p. 19), which indicate with any certainty that the lake-dwellers employed wagons.* However, we must bear in mind on the one hand, that articles of wood are found but very rarely compared with articles of other materials, in the remains of the lake-dwellings; and on the other, that even if the lake-dwellers were acquainted with wagons, they had very few opportunities of using them, as their intercourse undoubtedly and naturally was conducted mainly on the water-ways.

That the lake-dwellers, like the Indo-Europeans, moved along these ways in huge "dug-outs," propelled by oars and not by sails, is shown by the "dug-outs" themselves, which have been raised from the bottom of the lakes (Report vii. 57).

No one can look over the parallels drawn above and avoid the conviction, that in spite of some divergent and some obscure points, still in the main and on the whole the civilisation that confronts us in the oldest monuments of Switzerland is the same as that which we have inferred by means of philology and history, to have characterised the undivided European branch of the Indo-Germanic family. This leads to the further conclusion that the

* Portions of wagons, made of bronze and pointing to importation from Etruria, have been found in the lake-dwellings in the Neuburg Lake. *Cf.* Report viii. 43, *ff.*: "Etruskische Streitwagen aus Bronze in den Pfahlbauten."

oldest inhabitants of Switzerland may ethnologically have belonged to the Indo-European family—a conclusion which, as we saw above was, and at that time was bound to be combated by earlier students, such as Misteli, (above, p. 28) and Schleicher (above, ditto).

But though the lake-dwellers may have been Indo-Europeans, it by no means follows that they must have been; for the objection that the culture, which we have claimed, ethnologically speaking, as Indo-European, may once have covered large portions of Europe and have extended to peoples of other races, is possible in itself, and can only be partially refuted. It applies to the Finns, who are readily regarded as the original inhabitants of Europe, and who, to the most recent times (*cf.* F. Dahn, *Urgeschichte d. germ. und rom. Völker*, i. 6), have been thought to have populated the lake-dwellings of Switzerland. Such an assumption however is, from what we learn about the original culture of the Finns from the evidence of philology (*cf.* above, p. 45) and history (*cf.* Müllenhoff, *D. A.*, ii. 39), quite moribund. These peoples may have been found by the Indo-Europeans in Europe, but certainly not in the Swiss lake-dwellings (*cf.* K. Müllenhoff, *loc. cit.*, ii. 54).

The case is different with those pre- or non-Indo-European peoples, who are rightly thought to have once widely occupied the south of Europe, the Iberi, Ligurians, Raeti, &c. What we know about the original culture of these tribes (*cf.* L. Diefenbach, *O. E.*; W. Helbig, *D. Italiker in der Poebne*, pp. 30, 35, *ff.*; and H. Kiepert, *Lehrbuch der alten Geographie passim*), is so uncommonly little and dubious, that it seems impossible to demonstrate that the culture of the Swiss lake-dwellings could not have had its counterpart amongst them—although individual facts seem to indicate rather that it had not than that it had.

This uncertainty compels us to sum up the results of this chapter thus: That first the culture of the Swiss lake-dwellings is practically identical with the culture common to the European members of the Indo-Germanic family (above, p. 131, and below, ch. xiv.); and that secondly, from this point of view, there is nothing to prevent our assuming that the most ancient inhabitants of Switzerland were a branch of the European division.

In abrupt contrast to the "neolithic" culture revealed in the lake-dwellings stand the "palæolithic" finds in the caves of France, Belgium, Germany, &c., the fauna of which (cave-bear, mammoth, rhinoceros) belong to a period in the world's history that has passed away in Europe. The rudiments of human culture here presented to us are far below the most ancient state of things that we can discover amongst the Indo-Europeans. Here alone we have a stratum of culture, which in point of archæology, is indubitably either non-Indo-European, or pre-Indo-European.

CHAPTER XII.

FAMILY AND STATE.

Hypotheses as to the Evolution of the Family—Our Object—I. Indo-Germanic Names of Kin: 1. Father, Mother, Son, Daughter, Brother, Sister—2. Paternal and Maternal Uncles and Aunts, Nephew, Cousin, Grandparents, Grandchildren—3. Relation by Marriage—Explanation of the Facts Ascertained—The Indo-Germanic Family Agnatic—II. Indo-European Marriage, Position of the Indo-European Woman: Purchase—Rape—Marriage Ceremonies—Man and Wife—Sacrifices Common to the Two—Polygamy—Levirate—Adultery in the Husband and the Wife—The Father's Right of Exposure—The Widow—III. Family and State: The Joint Family—The *Bratstvo* and the Sib—Blood Revenge—The Tribe—Regal Power—Had the Indo-Europeans a Common Name?

On the very threshold of European tradition, in Homer, we are met by a conception of marriage than which modern civilisation has conceived nothing purer or more affectionate. Ἕκτορ (says Andromache, *Il.*, vi. 429) *ἀτὰρ σύ μοι ἔσσι πατὴρ καὶ πότνια μήτηρ ἠδὲ κασίγνητος, σὺ δέ μοι θαλερὸς παρακοίτης*; and in the *Odyssey* (vi. 182) we further have: *οὐ μὲν γὰρ τοῦ γε κρείσσον καὶ ἄρειον ἢ ὅθ' ὁμοφρονέοντε νοήμασι οἶκον ἔχητον ἀνὴρ ἠδὲ γυνή*:—

> "For nothing sure more goodly or better may be found
> Than man and woman holding one house with one goodwill."
> (*Morris.*)

And yet, like every other human institution, this relation of husband to wife must have started from some lower beginning not wholly raised above the level of brute-life. The question is whether we are yet in a position to determine with some degree of clearness the lines of its evolution.

The usual theory of this process of evolution assumes that in the history even of the human family there was a stage of promiscuous sexual relations, *i.e.*, a state of things in which within a certain community any man might have sexual relations with any woman. In view of the consequent uncertainty as to the paternity of any child, it naturally came about that the child was counted akin not to its father but to its mother; and this accordingly is the root of that phase in the life of the family which is known as that of "maternal rights" or "female descent." On the other hand, according to this view, the transition to monogamy and male descent is afforded by polyandry, *i.e.*, the joint possession in marriage of one wife by a number of men, usually related to each

other, an institution which is supposed to have left traces of its existence in the shape of the levirate amongst peoples that have reached a higher level. The relation of the child to its father then gradually came to be better recognised, and then entirely superseded that of the child to the mother, while only quite at the last was it recognised that the child was equally related to both parents.*

Against this, or similar views, various objections, not without reason, have of late been raised, especially by C. N. Starcke (*Die primitive Familie in ihrer Entstehung und Entwicklung*, Leipzig, 1888). Starcke seeks the explanation of the various forms of human marriage, not so much in the sexual needs of primitive man (which in his opinion would never have resulted in marriage) as in the needs of his domestic economy; he needed a slave, a housekeeper, to keep what he owned together. Then came the wish, based on practical and on religious reasons, to have children. Whether they were of his begetting was a point to which he gave no weight, as everything which the woman belonging to him produced became his property. It was only by slow degrees that sexual life became, first for the woman, then for the man, focussed in marriage. "Maternal rights" or "female descent" are regarded by Starcke as being frequently a later device, which, however, has nothing to do with reflections as to the alleged uncertainty of the child's paternity.

Fortunately, it is not our business to take up a decided attitude with regard to the far-reaching problem here touched upon. Our object is much humbler and much more limited; it is to sketch a picture of marriage and the organisation of the family in the primeval period of the Indo-Germanic peoples; and the only reason we had for briefly mentioning the disputed questions connected with the origin of human marriage generally, was that, as we shall hereafter see, they occasionally crop out in the field of our investigations. We shall, however, endeavour to keep our investigations free from speculations as to the primeval condition of man, and to base them on the foundation of purely historic, and especially linguistic, research.

Though this reduces the extent of our task, yet the materials for it are so unusually abundant that we must begin by renouncing any attempt even approximately to exhaust them within the limits of this work. We shall, therefore, confine ourselves to a close examination of some points especially important for judging the Indo-European family and its evolution.† We begin with a con-

* *Cf.*, amongst others, Lubbock, *The Origin of Civilisation*, p. 50, *ff.*, 1875; and, recently, F. v. Hellwald, *Die menschliche Familie nach ihrer Entstehung und natürlichen Entwicklung*, Leipzig, 1889.

† I can the better do this because I learn from Prof. B. Delbrück that he will shortly publish a detailed study of the Indo-European family. In a conversation on this subject, it appeared that we certainly coincided as to one point of great importance in judging of the organisation of the Indo-European family, i.e., the original significance of the names for relatives by marriage. This is a welcome confirmation of the correctness of our several investigations. Delbrück's work has since appeared in the *Abh. d. K. S. Gesellschaft d. Wiss.*, xxv.

sideration of the Indo-European names of kin, in the hope that from them we may learn something further as to the organisation of the Indo-European family.

I. Indo-European Names of Kin.

We begin the discussion of Indo-European names of kin with a group of persons whose designations have proved remarkably tenacious of life, both as regards form and meaning. They are the names of—

1. *Father, Mother, Son, Daughter, Brother, Sister.*

Father: Sans. *pitár*, Zend *pitar*, Armen. *hair*, G. πατήρ, Lat. *pater*, I. *athir*, Goth. *fadar*.

Mother: Sans. *mátár*,* Zend *mátar*, Armen. *mair*, G. μήτηρ, Lat. *máter*, I. *máthir*, O.H.G. *muotar*, O.S. *mati*—Lith. *motė*, "woman" (*mótyna*, "mother"), Alb. *motrę*, "sister."

In addition to these organic formations, the Indo-European languages are pervaded by names for father and mother of a more onomatopoetic character. Thus:—

Father: Sans. *tátás*, G. τέττα, Lat. *tata*, O.H.G. *toto*, &c. (Grimm, *W.*, ii. 1312), Lith. *tėtis* (also *tėwas*), Alb. *tate* †—G. ἄττα, Lat. *atta*, Goth. *atta*, O.S. *otĭcĭ*, Alb. *at*.

Mother: Sans. *nanā* (G. νάννα, νέννα, "aunt," paternal and maternal), Alb. *nenę*; O.H.G. *ama* (Lat. *am-ita*, "aunt," paternal?), Span. Port. *ama*, Alb. *ęmę*; Lat. *mamma*, Alb. *męmę* (G. μάμμη, generally "grandmother"); also O.N. *móna*, O.H.G. *muoma*, "matertera," Dutch *moeme*, Lith. *momà*, O.H.G. *muoia* = G. μαῖα.

It accords with the affection of the east European languages for diminutives, that they are just the tongues in which the old names for father and mother have been either driven out by these child's words or have changed their meaning.

A common name for the two parents is not to be traced in the Indo-European languages. This conception is expressed in the separate languages by words such as G. τοκῆες, γονεῖς, Lat. *parentes*, Lith. *gimdýtojei*, "the begetters," Goth. *bérusjôs* (*cf.* Sans. *bhartrî*, G. ἀντιφάρα), O.H.G. *eltiron*, "the old ones," and so on. Goth. *fadrein*, "parents," literally "fatherhood," is interesting. A.S. *feþgen* also is collective:—

Son: Sans. *súnús*, Zend *hunu*, G. ὑύς (*ὑ-ju*), Goth. *sunus*, Lith. *sunùs*, O.S. *synŭ*—Sans. *putrá*, Zend *puthra*, Osc. *puklo*.

* The older language still has *bhartrî*, "mother" (Av.). This may be compared with the Syrac. ἀντι-φάρα · μητρυιά, Hesych., as this yields a *φάρα, "mother."

† J. Schmidt (*K. Z.*, xxv. 34) regards this series as developed out of *pt-atá (: p(e)tér).

Daughter: Sans. *duhitár*, Zend *dughdhar*, Armen. *dustr* (*ustr*, "son;" Hübschmann, *A. St.*, 47), G. θυγάτηρ, Goth. *daúhtar*, Lith. *duhtė*, O.S. *dŭšti*.

Brother: Sans. *bhrā́tar*, Zend *brâtar*, Armen. ελbair (G. φρήτηρ, ἀδελφός, Hesych.), Lat. *frâter*, I. *bráthir*, Goth. *brôþar*, Lith. *broterėlis*, O.S. *bratrŭ*.

Sister: Sans. *svā́sar*, Zend *qaṅhar*, Armen. *k'oir* (G. ἔορ, see below), Lat. *soror*, I. *siur*, Goth. *svistar*, Lith. *sesŭ*, O.S. *sestra*.

Whereas the Latins have not a trace left of the Indo-European word for "son" and "daughter," in the place of which they use *filius*, *filia*, "suckling" (according to G. Meyer, however, = Alb. *bir*, *bil'ę*), the Greeks have lost the old [illegible]ssions for brother and sister, except in certain survivals. [illegible] are replaced by ἀδελφός (Lac. ἀδελιφήρ, in suffix resembli[illegible] names of kin), ἀδελφή, "sprung from the same wo[illegible] ὁμογάστωρ, ἀγάστορες, ἀδελφοὶ δίδυμοι, ὀγάστωρ, Sa[illegible] + *udará*, "belly," Osset. Dig. *ānsuwār* = *ān* + *suwār*, [illegible] the obscure* κασίγνητος, and also simply κάσις.

We shall deal hereafter with [illegible] the original meaning of which has almost entirely faded. N[illegible] for a word as to the above-mentioned ἔορες = Lat. *sorôres*.

Hesychius interprets ἔορ by θυγάτηρ and ἀνεψιός, ἔορες by προσήκοντες, συγγενεῖς. The explanation of the three last meanings seems to me to lie in comparing the Lat. *consobrini* (**consosr-ini*). This word originally meant the children of what is called in German a *Geschwister*, *i.e.*, originally a pa[illegible] of sisters (O.H.G. *gi-swistar*, O.D. *gisustruon*), then the children of two brothers (*fratres patrueles*, *sorores patrueles*), and of a brother and sister (*amitini*, *amitinæ*; cf. *Corp. Jur. Civ.*, xxxviii. x. 1). So too, I take it, ἔορες originally meant "sisters," then "sisters' children," "children of brothers and sisters" (ἀνεψιοί). For the absence of any mark of derivation we may compare Homeric κασίγνητος, orig. "frater," then also "fratris liberi" (*consobrini*, ἀνεψιοί). This degree of relationship, then, is what is meant by ἔορες = προσήκοντες, συγγενεῖς.

What may have been the meanings of the roots of these names of kin is a question which we refrain from pursuing for reasons already given (p. 139, *f.*). The only thing certain seems to me to be that the Indo-European name for son comes from the root *sū*, "beget, bear" (Sans. *sū*, "genitor" and "genetrix").

It seems to me at least not improbable that the Indo-European name for father, **p(e)-tér*, goes back to the same root, or was at an early time assimilated to it, as the name for spouse and lord,

* Κασι- seems to go back to **ku-ti*, and may belong to I. *cétne*, "the first" (from O.S. **ken*, "begin;" Miklosich, *Et. W.*), so that κασίγνητος, κασιγνήτη, "first-born," male and female, would = brother and sister. *Cf.* Hom. γνωτός, "born" = "brother," and colloquialisms such as German "*mein ältester*," "*meine älteste*." Nevertheless, Greek itself does not offer a trace of any such fundamental meaning as "first-born;" and, accordingly, this comparison is only given *faut de mieux*, for the comparison of O. Eng. *hyse*, "boy," throws still less light on the meaning.

Sans. *pá-ti*, G. *πά-σι-ς*, which we shall discuss subsequently. This root is perhaps preserved in the Sans. *pá*, "protect," so that the *patria potestas* of the father and husband is shown on purely philological grounds to have been the guardianship of his family.

2. *Brothers and Sisters of the Father and Mother, Nephew, Cousin, Grandparents, Grandchildren.*

The names of kin discussed in the previous section were characterised by considerable conformity in their formation, for with the exception of the Indo-European name for son they all have the suffix *-ter* or *-ar*. Their stability of meaning, again, only suffered in isolated exceptions.

Things are quite different with the circle of relatives whose appellations we now turn to. There is no uniformity in the formation of their names, and the meanings of these names of kin seem to have been in a state of continual flux. We will first try to take a comprehensive glance at the most salient facts, and then see whether an explanation can be found.

The series which shows most uniformity in form and meaning is that of the names for the father's brother: Sans. *pítrvya*, Zend *túirvyô* (Bartholomae, *B. B.*, x. 271), G. *πάτρως*, Lat. *patruus*, O.H.G. *fatureo*, A.S. *fædera*.

There is no Indo-European term for mother's brother. In Sanskrit we have *mātulá* (perhaps = **mata-tulya*; cf. *tāta-tulya*, "father-like," "paternal uncle"), in G. *μήτρως* (modelled on *πάτρως*, later also = "maternal grandfather"), in Armenian *k'eri* (: *k'oir*, "sister").

The European languages, however, very frequently form the name of the mother's brother from a stem which also designates the grandfather or grandmother. To this belong Lat. *avus*, "grandfather": *avunculus*, Goth. *avô*, "grandmother," O.N. *áe*, "great-grandfather": O.H.G. *ôheim*, A.S. *eám*, O.F. *ém* (formation obscure)—Lith. *awýnas*, Pr. *awis*, O.S. *uj*, *ujka*, all "avunculus"—M. Cymr. *ewi-ther*, O. Corn. *eui-ter*, "uncle," I. *aue*, "grandchild" (Stokes, however, connects it with G. *πάϝις*; *B. B.*, ix. 87).

This change of meaning from grandfather to mother's brother finds a parallel in that from grandfather to father's brother, as shown in the following series:—

O.S. *dědŭ*, "avus," G. *τήθη*, "grandmother"—Lith. *dědis*, "father's brother" (*dėdė*, *dėdźius*), G. *θεῖος* (from **θη-jo*), "paternal and maternal uncle."

Cf., further, Lith. *strujus*, "old man": O.S. *stryj*, *stryjci*, "patruus" (Miklosich, *Et. W.*).

The complement in many respects to the change of meaning depicted in the two preceding groups is offered by the name of kin which is the most widely distributed in the Indo-European languages of all the names we have to discuss in this section, for it

combines the meanings of "grandchild" and "nephew," and also has the general meaning of "descendant."* It is the Lat. *nepos* and its stock:—

Sanskrit: *nápāt*, *náptar*, "descendant in general, son, especially grandson," used in the older language mainly in the general sense, in the later only in the sense of "grandchild" (*B. R.*)—*naptī*, "daughter," "granddaughter" (Zend *napti*).

Iranian: Zend *napāt*, "grandson," N. Pers. *navāda*, "grandson," *napti*, "kindred."

Greek: *νεποδες* (assimilated to *πους*), "brood," *ἀ-νεψιός*, "child of brother or sister" (*ἀνεπ-ιο-*, *s* as in O.S. *nestera* from **nep-s-tera* or = *ἀ-νεπ-jo*), *νεάπραι υἱῶν θυγατέρες*, Hesych., "grand-daughters" (for **νεποr-ραι*).

Latin: *nepōt-*, "grandson," later also "nephew."

Teutonic: A.S. *nefa*, "grandson," "nephew," O.N. *nefi*, "kinsman," O.H.G. *nëvo*, M.H.G. *neve*, "sister's son, rarely brother's son, also uncle, then kinsman in general" (Kluge); O.N. *nipt*, "sister's daughter, niece," O.H.G. *nift*, M.H.G. *nift*, Goth. *niþjis*, "cousin," O.N. *niðr*, "descendant" (**niptjo*), &c.

Old Slavonic: *netiji*, "nephew," *nestera*, "niece."

Old Irish: *nía*, "sister's son."

A glance at these facts shows that the meanings "nephew," "cousin," &c., only occur in the European languages, to which, again, the change of meaning from grandfather, to uncle is confined.

The Indo-Iranian languages have developed an expression of their own for brother's son: Sans. *bhrātṛvya* = Zend *brātūrya* (*cf.* Bartholomæ, *B. B.*, x. 271).

This in my opinion practically exhausts the agreements to be found in the names of this degree of kindred; but a few words must yet be said as to the sisters of the father and mother, and grandparents and grandchildren.

The names of the sisters *πρὸς πατρὸς* are generally sharply distinguished from those *πρὸς μητρὸς* in the individual languages. Thus in the Lat. *amita* : *matertera*, in the Teut. O.H.G. *basa*, A.S. *fæpu*, O.F. *fethe* : O.H.G. *muoma*, A.S. *módrie*, Dutch *mödder*,† O.S. *strina* (: *stryj*) : *teta*, *tetka*. In Greek no clear distinction seems to have been made between such words as *θεία*, *τηθίς*, *νάννη*.

The names of the grandparents, apart from the cases of agreement cited above, do not point to the existence of any primeval forms. Either the grandfather and grandmother were simply called the old ones: O.H.G. *ano*, *ana* = Lat. *anus*, "old woman,"

* E. Leumann's attempt (*Festgruss an O. v. Böhtlingk*, p. 77, 1888) to show that the fundamental meaning of *ne-pōt-* is "orphan" ("unprotected") is not very illumining.

† The last two agree in formation with G. *μητρυιά*, Armen. *maiuu*, which, however, mean "step-mother."

O.S. *baba*, "grandmother," or compounds such as Sans. *mâtâmaha*, G. *μεγαλομήτηρ*, *μητροπάτωρ*, L. *schmâthir*, were employed. G. *πάππος* is a child's word; Zend *nyâka* = O. Pers. *nyâka*, N. Pers. *niyâ*, is obscure; *cf.* O. Pers. *apa-nyâka*, "ancestor." On the other hand, we can point to a special agreement between German, Slavonic, and Lithuanian in the name for grandson, O.H.G. *enichil*, O.S. *vŭnukŭ*, Lith. *anukas*, which is rightly interpreted as "little ancestor" (O.H.G. *ano*). O.H.G. *diehter*, "grandson," is derived from Sans. *tâc*, "posterity," by the addition of the suffix *-ter*, which is used in names of kin (Kluge); *cf.* **nepôt*, "descendant," "grandson." The other names for grandson and great-grandson, such as Sans. *pâutra*, *prapâutra*, O.H.G. *jernero*, G. *ἔκγονος*, &c., offer nothing of interest. O.S. **stura*, "great-grandson," is compared by Miklosich (*Et. W.*) with Lith. *prakurejis*, "ancestor."

3. Connection by Marriage (*Affinitas*).

I lay down a proposition at the beginning of this section, which I hope to show to be correct in what follows, and which if correct seems to me to contain an extremely important clue to the comprehension of the ancient Indo-European family. That is to say, I am convinced that only the connection of the daughter-in-law with the husband's relatives, and not the connection of the son-in-law with the relatives of the wife, can be established by Indo-European equations.*

The young pair, whose union connects two families, consists of the daughter-in-law (relatively to the man's parents) and the son-in-law (relatively to the wife's parents). We find that the former alone has a just claim to be descended from Indo-European times. The daughter-in-law is called: Sans. *snushâ*, N. Pers. *sunâr* (Spiegel, *A. Per.*, 88 ?), Osset. *nest'ä* (*cf.* Hübschmann, *Osset. Spr.*, p. 52), Armen. *nu*, G. *νυός*, Lat. *nurus*, O.H.G. *snura*, O.S. *snŭcha*, Alb. *nuse*.

In Celtic and Lithuanian (*marti*) alone does the word seem not to be established. Although incapable of proof, the old-fashioned interpretation of the Indo-E. **snusâ* as "female son" (**sunû-sâ*) is probably right.

In contrast to the name of the daughter-in-law, the names for the son-in-law only coincide in those languages which are closely connected together: in Indo-Iranian, Sans. *jâmâtar* = Zend *zâmâtar* (connected with *jâmi*, "related"); and in Lithu-Slavonic, Lith. *žéntas* = O.S. *zętĭ*, to which probably Alb. *dendĕr*, "bridegroom," also probably belongs. The root of both stocks of words is *gen*, Sans. *jánati*, Zend *zizananti*, "beget," to which (*cf.* *gen-us*, *gigno*) belongs also the Lat. *gener*,† formed upon *socer* and **lêv-ir* (which subsequently became *lêvir*, under the influence of *vir*). G. *γαμβρός* (**γαμ-ρό*) is the "wedder" (*γαμέω*). Teut. A.S. *âdum*, O.H.G.

* A. Fick (*Sprachenheit*, p. 270, *f.*) had a presentiment of this fact.

† The assumption that *gener* is described from **genrn* (= *γαμβρός*) is supported by no analogy whatever.

eidum, most probably = *sponsus* (from A.S. *áp*, O.H.G. *eit*), inasmuch as Goth. *liugan*, "wed," also seems connected with I. *luge*, "oath." Expressions, therefore, such as kinsmen, begetter, pledged, were employed to express the relatively new idea of "son-in-law."

From the children we now turn to the parents-in-law:—

Father-in-law: Sans. *çváçura*, Zend *qasura*, Armen. *skesr-air* ("mother-in-law's husband"), G. ἑκυρός, Lat. *socer*, Goth. *svaíhra*, O.S. *svekrŭ*,* Lith. *szészuras*, Alb. *viéher*, Corn. *hveger*.

Mother-in-law: Sans. *çvaçrŭ*, Armen. *skesur*, Lat. *socrus*, O.S. *svekry*, G. ἑκυρά, Goth. *svaíhro*, Alb. *viéhere*, Corn. *hvigeren*.

This word can accordingly be established to exist in all Indo-European languages, and obviously is compounded of the pronominal stem *sve* and *kuro*. The latter may still be compared with G. κύριος, so that the sense is as Curtius (*Grdz.*, p. 136) maintains, ἴδιος κύριος† (*i.e.*, of the **suusā*). The word is in several of the separate languages used indiscriminately of the husband's parents and the wife's; but there is no lack of clear indications that this was not an ancient, or at any rate not the primeval, use of the word.

In Homer, ἑκυρός, ἑκυρή is used only of the husband's parents, whereas there is a special word for the father of the wife, πενθερός (: Sans. *bándhu*, "kindred, association, kinsmen"). The same state of things prevails, or prevailed, in Lithuanian, where the obsolescent *szészuras* is, or was, only employed for the man's father, whereas *uszwis* (Lat. *uxor* = I. **ôksver*) is used of the wife's. Finally, the tables of South Slavonic names of kin given by F. Krauss (*Sitte und Brauch der Südslaven*, p. 3, *ff.*, Wien, 1885), clearly indicate that the words *svekrŭ*, *svekry*, were employed exclusively to designate the husband's parents (*cf.*, p. 8; 12, 13). The wife calls her spouse's relatives *svekrbina*, the husband his wife's *tazbina* (p. 3).

This agreement of three branches of the Indo-European family of speech must, however, necessarily mirror the original state of things; for if we wished to assume, say, that ἑκυρός from the beginning designated alike the man's father and the wife's, and that only in later times did individual languages indulge in the luxury of distinctive names, we should have to regard it as a wholly inexplicable freak of chance that three totally different linguistic areas (Greek, Lithuanian, Slavonic) came to use ἑκυρός in the same limited sense as "husband's father." The reply that there may have been even in the primeval period two distinct terms, ἑκυρός for the husband's father, and a lost, unknown *x* for the wife's, is invalidated partly by what has already been said and partly by what follows.

* The *k* instead of *s* in the Slavonic words is remarkable.

† Every woman according to Greek law must have a κύριος; this in the case of an unmarried woman was the father or nearest blood-relation, of a married woman the husband.

The Indo-European equations expressive of affinity, which still remain, refer simply to the connection of the wife with the man's relations. They are:—

Husband's Brother: Sans. *dêvár*, Armen. *taigr*, G. δαήρ, Lat. *lĕvir*, Lith. *dĕwerìs*, O.S. *dĕverĭ*, A.S. *tácor*, O.H.G. *zeihhur*.

Husband's Sister: G. γάλως, γαλόως, Lat. *glōs*, O.S. *zlŭva*; *cf.* Phrygian: γάλλαρος · Φρυγικὸν ὄνομα (sc. συγγενικόν), γέλαρος · ἀδελφοῦ γυνή, Hesych. In Sanskrit the word cannot be established; here the man's sister is called *nánándar*, *vanandar* (l. *ander*, "young woman"?). *Cf.* also Lithu-Pr. *mósza*, *moazo*.

Husbands' Brothers' Wives: Sans. *yátaras* (*yátar*, "wife of the *dêvár*"); G. εἰνάτερες, Lat. *janitrices*, O.S. *jętry*, "fratria;" the husband's brother's wife: Serb.-Croat. *jetrva*, Bulg. *jetorva*; brothers' wives are *jetrve* to each other (Krauss, *loc. cit.*, p. 9), Lith. *inte*, "brother's wife," Lett. *jentere*.

I regard, then, the position taken up at the beginning of this section, as proved.*

We have accordingly to start from a state of things in the family organisation of the ancient Indo-Europeans, in which the notion of relation by marriage was developed solely as between the wife and her husband's kinfolk. The wife's family might then indeed be counted as "allied by friendship" (G. κηδεστής, "any relation by marriage," "son-in-law, father-in-law, brother-in-law," πενθεροί, οἱ τῆς κόρης γονεῖς, Hesych., &c.; Crete, Gortynâ καδισταί, "blood-relations," especially of wives, κηδεμόνες · οἱ κατὰ ἐπιγαμίαν οἰκεῖοι, Hesych. κήδευμα, "affinity," &c.; κήδειος, κήδιστος, "dear," South Slav. *prijateljština*, "the wife's kindred generally"; O.S. *prijateli*, "friend;" *cf.* Germ. *freundschaft* = "kindred," like M.H.G. *vriuntschaft*, "affinity," Nibelungen, xxxvii. 2160 B.); but it was not regarded as related. When married, a woman left the circle of her own kindred and entered that of her husband; but her new connection severed her previous family ties, it did not create fresh ones between her kindred and her husband's. The wife vanished, so to speak, into the house of her husband.

This, however, is intimately connected with the fact that, slight as was the connection which the bride and young wife formed between the two families, the blood-relationship which was estab-

* Against its correctness the only thing, as far as I know, that can be alleged is the by no means certain equation: G. ἀέλιοι · οἱ ἀδελφὰς γυναῖκας ἐσχηκότες, αἴλιοι · σύγγαμβροι (Hesych.) = O.N. *svilar*, "the husbands of two sisters" (Vigfusson, Kluge, *K.Z.*, xxvi. 86), in so far as it gives expression to relationship by marriage, as existing between men. But, first, this equation is confined to Europe, and can, therefore, prove nothing as to the oldest primeval period; next, it is quite possible to conceive such a degree of relationship arising between members of one and the same family, that is supposing one starts from the Joint Family or House Community (on which see below). The ἀέλιοι may have been originally brothers, for instance, who married sisters. Max Müller compares Sans. *syâlá*, "wife's brother," with ἀέλιοι (but cf. *çyâlá*).

lished when the wife became a mother, between her relations and the children of herself and her husband, was regarded by the Indo-Europeans, at any rate at first, as equally slight. It is, accordingly, in my opinion, no matter of mere chance that the Indo-European languages have an identical name for the father's brother, but not for the mother's; and, generally, that merely cognatic degrees cannot be authenticated by primeval equations.

This hypothesis, however, of a primitive Indo-European family organisation based on a strictly agnatic principle—a hypothesis to which we have been led by purely linguistic considerations, is opposed alike to the wholly unfounded assertion (promulgated by Bachofen, *Antiquarische Briefe*,* particularly) that the Aryans still lived in promiscuity, counting kinship only through the mother; and to the conclusions of Leist (*Gräco-italische Rechtsgeschichte*) who explains "the cognatic conception of the family, resulting from *obsequium* to the parents, as the primeval Aryan form." Based on this is the conception of a narrow circle of relatives, corresponding to the Lat. *consobrini*, the G. ἐξάδελφοι (regarded by Leist as cognatic†), and the Indian Sapindas, which Leist considers to be "the oldest and far the oldest" conception which the Greeks and Italians inherited from their forefathers. His overestimate of the antiquity of the cognatic conception of the family amongst the Indo-Europeans compels Leist to treat a series of Roman legal institutions, based on a strictly agnatic system, such as the ancient Roman law of inheritance, as being recent innovations in Roman law. We only mention this to give some idea of Leist's fundamental position, as it is of course no possible part of our design to follow a jurist further in the juridical field.

Although the idea of affinity with a wife's relations, and the cognatic conception of the family based thereon were foreign to the primeval period, the question may yet be put whether the rudiments and beginnings of both were not present if not in Indo-European, at any rate in pro-ethnic times. Appeal may be made to the names for son-in-law which coincide in certain groups of languages (above, p. 376), for through him the amalgamation of the man's family with the wife's was effected. In Lithuanian and Slavonic alike the pronominal stem *svoi-* is used to designate affinity.‡ A Slavo-Prussian equation, G. *ἑστί*, "soeer" = Pruss. *tisties*, probably originally meant *πενθερός*, not *ἑκυρός* (*cf.* Krauss, *loc. cit.*, pp. 12, 13, though also p. 8).

Above all, in support of the antiquity of the cognatic conception, the fact may be appealed to that most European languages

* *Cf.*, on the other hand, the author in *Deutsche Lit.*, 1886, No. 27.

† *Cf.*, on the other hand, F. B. Jevons, "Kin and Custom," *Journal of Philology*, xvi. 99.

‡ *Cf.* Lith., *svainė*, "wife's sister" (*šaigonas*, "wife's brother"), *svainius*, "sister's husband," O.S. *svoiti*, "affinis," *svatŭ* (**svojatŭ*), and so on; *cf.* Miklosich, *Et. W.*, p. 332. In Teutonic, O.H.G. *ga-swio* (**swei-*), "levir," probably belongs here.

have made themselves names for the mother's brother from the same stem **avo-*, though certainly with different formative suffixes (Lat. *avunculus*, M. Cymr. *ewythr*, O.H.G. *ôheim*, Lith. *avýnas*, O.S. **ov-jo* = *uj*).

The original meaning of this stem **avo* or **avon* (Lat. *avunculus*, Goth. *avôn-*, Cymr. **aven-tr* = *ewithr*) must be assumed to be not grandfather in particular, but forefather generally.

Anyhow, no terminology distinguishing with precision between the ascendants of the father and the mother can, as we have seen (p. 374), be traced in the original language. This, again, may be a consequence of the position which the old people plainly held in the family. When father and mother became old and weak, useless for work or war, when power and property passed to the son, it was in accordance with the hard and cruel mode of thought common to primitive man, that these old people should be viewed as somewhat superfluous portions of the general household. It is only at a higher level of culture that the duty of affection towards parents, which culminates in the divine injunction, "Honour thy father and mother that thy days may be long in the land," comes to modify the dread which the ancients felt for "oppressive," "loathsome," "doleful," "pernicious" old age, and which made them welcome a release from it.

The custom of putting a violent end to the aged and infirm survived from the primeval period into historic times not unfrequently amongst the Indo-European peoples (*cf.* Dieterlich, *Völkerkunde und Bildungsgeschichte*, p. 247, *f.*). It can be authenticated in Vedic antiquity (Zimmer, p. 328), amongst the Iranians (the Bactrians* and Caspian peoples), amongst the ancient Germans, the Slavs, and Prussians (Grimm, *D. R.*, p. 486, *f.*; Weinhold, *Altn. Leben*, p. 473).

We do not draw the conclusion from this kind of statement that the violent removal of old people was a universal Indo-European custom; but we should regard such a view (*cf.* Hehn, above, p. 35), for all that, as nearer the truth than Leist's view touched upon above, according to which *obsequium* from relatives of a certain degree of kinship towards the *parentes* was a primeval institution of the original Indo-Europeans.†

If, however, the stem *avo-* originally meant "forefather in general," this would correspond to the fact that the original meaning of **nerô-*, as shown by the above collection of instances (p. 374), was, in all probability, "descendant in general."

* *Cf.* Strabo, c. 517: τοὺς γὰρ ἀπειρηκότας διὰ γῆρας ἢ νόσον ζῶντας παραβάλλεσθαι τρεφομένοις κυσὶν ἐπίτηδες πρὸς τοῦτο, οὓς ἐναφιασᾶς καλεῖσθαι τῇ πατρῴᾳ γλώττῃ. The statement in this form is hardly credible; it, therefore, seems to me not improbable that Strabo is here making a confusion with the ancient Persian funeral rite of the *Sagdîd* (N.P. *sag*, "dog," *dîd*, "look"), in accordance with which a dog was brought to the deceased in order that its glance might light upon the corpse (*cf.* W. Geiger, *Ostiran. Kultur*, p. 264, *f.*).

† On the allied subject of the worship of the dead, and offerings to the dead, see ch. xiii.

Perhaps in the agnatic family the word was applied to any descendant not a *filius*, *i.e.*, to the grandson, great-grandson, and also the nephew (relatively to the *patruus*). When in certain European languages derivatives from *avo-* came to be applied to the mother's brother, the stem **neptī-* took the same direction, and was used to express relation to the mother's brother and the mother's sister (*cf.* above, p. 374).

In a paper entitled "Germanische und moderne Rechtsideen im recipierten römischen Recht," ii. (*Z. f. vergl. Rechtsw.*, iv. 227, *ff.*), Bernhöft rightly infers from the change of meaning to be traced in the words *avus* and *nepos*, just spoken of, that "relation through the mother became much more prominent amongst the European peoples." He adds: "It may be conjectured that the influence of the conquered aborigines made itself felt. There are at the present day widely scattered peoples who only count relationship through the mother and her kinsfolk; and many indications intimate that the aborigines, when the Indo-Europeans on their entry into Europe gradually subdued, cherished views of this kind" (?).

I am of opinion that there is no need to resort to any such hypothesis, which is incapable of proof as regards the northern peoples particularly. It seems to me that the closer relationship established between the husband's family and the wife's can be better explained by the growth of more refined feelings generally, and by a change in civilising influences particularly. A stage of culture, in which the idea of relationship or affinity with the kinsfolk of the mother or wife has not yet sprung up, seems to me most conceivable in the case of nomad life, such as we must imagine to have prevailed in the oldest epoch of the primitive Indo-European period (ch. iii.). The distance in space between the pastures and the constant change of abode precluded the amalgamation of families of agnatic structure.

Things change as soon as the tribes take to agriculture and to more permanent abodes. This took place in the Indo-European world at a time when the European peoples on the one hand were still ethnically united, as were the Indo-Iranians on the other. It is noticeable in this connection that the idea of connection by marriage is expressed in Latin by *affinis*, *affinitas*, which need only mean "neighbour," "neighbourhood." Hesiod, too, gives the advice (*Works and Days*, 700): τὴν δὲ μάλιστα γαμεῖν ἥτις σέθεν ἐγγύθι ναίει. Were the προσήκοντες originally "affines," "those on the border" (*cf.* Leist, *Gräco-it. Rechtsgesch.*, p. 103)? I should be inclined to think that it was those families that settled, even if at first only for a time, on the same soil, amongst whom the idea of relationship with the wife's family would most readily develop.

It is also in my opinion possible, indeed, that the development of the cognatic conception of the family and the idea of relation by marriage may in its beginnings go back to prehistoric times in Europe, and that yet the fundamentally agnatic character of the family, inherited from the primeval period, was not materially affected thereby (*cf.*, further, section iii. below).

II. Indo-European Marriage, Position of the Indo-European Wife.

Indo-European marriage was based on the purchase of the bride. This fact appears clearly and plainly enough amongst most Indo-European peoples, and amongst some continued in its effects up to the threshold of the present. Aristotle (*Pol.*, ii. 5, 11; ii. 8, p. 1268 *b*, 39) says expressly: *τοὺς γὰρ ἀρχαίους νόμους λίαν ἁπλοῦς εἶναι καὶ βαρβαρικοὺς· ἐσιδηροφορεῦντό τε γὰρ οἱ Ἕλληνες καὶ τὰς γυναῖκας ἐωνοῦντο.* In the Homeric age a maid was called *ἀλφεσίβοια*, "a girl who brings her parents a good price," and rightly, for on occasion considerable gifts, *ἀπειρεσία ἔδνα*, were given to the father of the girl (cf. *Il.*, xi. 244):—

πρῶθι ἑκατὸν βοῦς δῶκεν, ἔπειτα δὲ χίλι' ὑπέστη
αἶγας ὁμοῦ καὶ ὄϊς, τὰ οἱ ἄσπετα ποιμαίνοντο.

The custom of bride-purchase prevailed throughout Teutonic antiquity, and it can scarcely be believed that Tacitus in the well-known passage of the *Germania* (c. 18: *Dotem non uxor marito sed uxori maritus offert*) is not referring to this. Not with equal certainty, however, can purchase be established on Roman soil as the oldest form of marriage. The original custom, of which the symbolical process of *coemptio* has preserved a reminiscence, yielded in the very earliest times among the Romans to the purely religious *confarreatio*, which contained no notion of purchase. On the other hand, we certainly again find marriage by purchase among the (Indo-G.) Thracians (Hdt., v. c. 6), for their chief Senthes can say to Xenophon (Anab., vii. 2): *Σοὶ δὲ, ὦ Ξενοφῶν, καὶ θυγατέρα δώσω καὶ εἴ τις σοί ἐστι θυγάτηρ, ὠνήσομαι Θρᾳκίῳ νόμῳ.*

The case was the same amongst the ancient Lithuanians, as we learn from *Michalonis Lituani de Moribus Tartarorum, Lituanorum et Moschorum fragmina ed. Grasser Basiliæ*, 1615, where it is stated on p. 28: "Quemadmodum et in nostra olim gente solvebatur parentibus pro sponsis pretium quod krieno ('purchase-money for the bride': Sans. *krī-ṇā-mi*, Lett. *kreens, kreena náuda*, 'a present to the bride') a Samagitis vocatur" (above, p. 348). So, too, the custom of purchasing the bride prevails partially, or did prevail, amongst the southern Slavs, where the price of girls reached such a height at the beginning of the present century in Servia, that Black George limited the price to be paid for a girl to one ducat (Krauss, *loc. cit.*, p. 272, *ff.*).

Again, amongst the Hindus, marriage by purchase was by no means unknown, as Strabo indeed was aware, for he informs us (c. 709): "They marry many wives purchased from their parents, giving a yoke of oxen on receipt." Strabo here means the fourth of the eight Hindu forms of marriage, the *Ârsha* form, according to which the bridegroom sends one or two pairs of oxen to the bride's father, a gift to which Manu and other lawgivers assign a symbolic

meaning, in virtue of which they counted the *Ârsha* form as one of the legitimate modes of marriage (Jolly, *Ueber die rechtliche Stellung der Frauen bei den alten Indern, Sitzungsberichte d. phil.-hist. Kl. d. Münchener Akademie*, p. 420, *ff.*, 1876). In Vedic times the bride had to be won by rich presents to the future father-in-law (Zimmer, *Altind. L.*, p. 310).

As, therefore, the bride was purchased from her father in the primeval period, it is obvious that the idea of a dowry or portion could not have yet come into existence at that time. Linguistic expressions for it were generally developed out of words which originally designated the purchase-money given for the bride, and then gradually came to be employed in the sense of dowry. The course of evolution in this department of civilisation obviously is that first the price paid is retained by the father, then in milder times returned along with the maiden as her portion, until finally the parents' contributions to the bride superseded the bridegroom's, or reduced it to a mere form.

This may be supported by a reference to the Homeric ἔδνον, ἐεδνόν, which probably exactly corresponds to the West. Teutonic **wetmo* (A.S. *weotuma*, O.H.G. *widamo*; Kluge, *Nomin. Stammb.*, x.). In the Homeric diction the ἔδνα are nearly exclusively presents to the bride or her parents, Μνᾶσθαι and ἔδνα go together. In *Od.*, viii. 318, Hephaestus demands his ἔδνα back because his wife has been faithless. The father and brothers of Penelope wish her to marry Eurymachus:—

ὃ γὰρ περιβάλλει ὑπαντας
μητρῆρας δώροισι καὶ ἐξοφέλλει ἑεδνα. (xv. 18.)

Only in one or two passages of the *Odyssey* (i. 278, ii. 196) is the word used of the dowry (*cf.* Kirchhoff, *Die hom. Odyssee*, p. 243). So, too, in Teutonic, the Burgund. *wittimo*, Frics. *witma*, A.S. *weotuma*, O.H.G. *widumo*, Germ. *wittum* are in their origin old words for the price paid for the bride, and are therefore synonymous with Longob. *mêta*, O.N. *mundr*, &c., and have only later partially taken different meanings* (Grimm, *R. A.*, p. 424; Schade, *Altd. W.*).

In Slavonic the *věno* = Sanss. *vásna*, "bride-price," which corresponds to the words in the last paragraph, has come to be frequently used *dôs*, which was unknown to older ages; or foreign words, such as G. προικιόν (= O.S. *prikija*), Ital. *dota* (Dalmatia), Turk. *miraz* (Bosnia), have been employed (Krauss, *loc. cit.*, p. 272, *f.*).

In the case of the Irish *tindscra*, also, Windisch (*I. Texte*) gives as the evolution of meaning: "(1) Purchase-money given for the bride, demanded by the parents, by the maiden herself; (2) dowry brought to the husband."

Side by side with the custom of bride-purchase there runs through Indo-Germanic antiquity another extremely primitive form

* Further linguistic evidence for the purchase of the bride amongst the Teutons: O.S. *bruggean* (Eng. *buy*) *ti brûdi*, O.N. *kona mundi keypt*, "lawfully acquired wife," M. Lat. *mundium*, O.N. *mundr*, "purchase-price."

of marriage, which to the present day survives amongst many peoples either in real earnest or as a mere symbolical presence (Lubbock, *Origin of Civilisation*, p. 72, *f.*), marriage by capture (δι' ἁρπαγῆς). According to Dionysius of Halicarnassus (*ii.* 30) this was at one time customary throughout ancient Greece, and, as every one knows, was retained by the conservative Dorians (*cf.* Rossbach, *op. cit.*, p. 213) as an important symbol in the marriage ceremony until late times. Even among the Albanians of to-day, as J. G. v. Hahn relates (*Albanesische Studien*, p. 146), during the wedding-dance, the bridegroom suddenly rushes to the bride, takes her by the hand, and dances with her, while the guests sing:—

"The ravens stole a partridge,
What will he do with the partridge?
With her he will dance and play,
With her he will spend his life."

So, too, traces of the capture of the wife are to be found amongst the ancient Prussians and Slavonic tribes.

The Hindus also had a special name for marriage by abduction: the *rákshasa* form, which was confined to the *kshatriya* or warrior caste.

If, then, as seems to be the case, bride-purchase and marriage δι' ἁρπαγῆς both go back to the primeval Indo-Germanic age, the question arises, What is the historical relation of these two forms of marriage to each other? Naturally, conjecture alone is possible. It might be supposed that marriage by purchase prevailed within the tribe or between friendly tribes, whereas capture was practised against hostile tribes. It seems to me, however, more probable that even before the dispersion of the peoples, capture may have been volatilised into a purely symbolical and formal part of the marriage ceremony, as which alone it existed in historic times, also,* in contrast to marriage by purchase. Marriage by capture would then belong to the very earliest age of the primeval Indo-European period, when we must conceive the ties of neighbourhood and kinship to have still been loose, and the nomad groups of pastoral and patriarchial families to have still been hostile to each other. Anyhow, a period in which wives were obtained by capture affords the best explanation of the above-described agnatic structure of the Indo-European family, and its non-recognition of affinity with the wife's relations. The requisite conditions for such affinity only came into existence when capture was driven out by purchase.

The Indo-European root by which the idea of marriage was expressed is *vedh* : *ved* (on the change between the *media* and *media aspirata* in the final letter; *cf.* Brugmann, *Grundriss*, i. 348). To it belong on the one hand the above-mentioned ἕεδνον, A.S. *weotuma*, on the other Lith. *vedù*, O.S. *vedą*, Zend *upa-vâdhayaêta*, "he would marry," Sans. *vadhû*, "young married woman." The

* *Cf.* Leist, *Altarisches Jus Gentium*, pp. 128, 130.

fundamental meaning is preserved in the Irish *fedaim*, "I carry" (*fedan*, "a team"). *Cf.* also Sans. *vahatí*, "he carries him a wife home;" *vahatí*, "wedding;" Lat. *uxorem ducere*, G. γυναῖκα ἄγεσθαι. In the same way O.S. *zeti*, "yaeti" (Miklosich, *Lex.* p. 1), is to be connected with G. ἄγεσθαι, "to lead" (Lat. *agere*, Goth. *sôkjan*).

These pieces of linguistic evidence seem to point to the existence even in the primeval period of the custom of ceremoniously conducting the bride home (on a wagon drawn by oxen, according to the picture given by a celebrated wedding-hymn in the Rigveda, x. 85); and it is not improbable that out of the numerous Indo-European wedding customs, of which in some cases we already have copious examples,* a series of other instances might be put together in which the Indo-Iranians and Europeans agree with startling precision—in fine that it is possible to infer what was the ceremonial of marriage amongst the Indo-Europeans. Such an attempt has been made quite recently by two students, by B. W. Leist, *Altarischos Jus Gentium*, p. 114, *ff.*, Jena, 1889, and by L. v. Schroeder, *Die Hochzeitsgebräuche der Esten und einiger anderer finnischer Völker*, Berlin, 1888.

Leist is of opinion that the agreement amongst the individual peoples allows us to distinguish three stages in an Indo-European marriage. In these, again, he discerns a worldly side and—in harmony with his view that the forefathers of the Indians, Greeks and Romans had given "their legal conceptions a sacred ritual garb even in the primeval period"—a sacred ritual side. These three stages according to Leist are: (1) Betrothal (Indian wooing, Teutonic betrothal,† G. ἐγγύησις, Lat. *sponsio* (more remote): G. νύμφη, Lat. *nupta*, *nubo* proves the Graco-Italian custom of veiling the bride; Indian offering of cows). (2) Contract (Indian *pânigrahanâ*, "clasping of hands," carrying thrice round fire and water from right to left, offering of butter and rice on the hearth of the bride's father, sitting on the bull's hide; Latin *dextrarum conjunctio*, *manus manciparique*, binding *aquâ et igni*, carrying round of fire and water, from right to left, *penis farreus*, *confarreatio*, sitting on the hide). (3) Completion (Indian lighting the wedding fire, which is conveyed by the bridal procession from the house of the bridegroom's father to the new dwelling, offerings of food; Latin *domum deductio*, offering of swine).

* *Cf.*, *e.g.*, for the Indians, F. Haas, *Die Heiratsgebräuche der alten Inder nach den Grihyasûtra*; Weber, *Ind. Stud.*, v. 207, *ff.*

† It is indeed incorrect for Leist to say (p. 180, note 7), "The idea of wooing can be traced in language as far back as the ancient Aryan period," and to appeal in support of this to G. *freien* = Sans. *pri*, "enjoy." All that can be said of course is that there was a verb in the original language for "love, enjoy, be gratified," out of which the meaning "woo" has been evolved in Teutonic, though only in Dutch there (Kluge[1], p. 94). *Cf.* above, p. 142.

It may rather be conjectured that in prehistoric times the root *prk*, iii. "to ask," was used of the wooing of a maiden; *cf.* Armen. *harsn*, "bride," Lat. *procus*, "suitor," Lith. *pirszlys*, South Sl. *prosci*, "woo."

For the rest no distinction in language was originally made between "bride" and "young woman;" *cf.* Sans. *vadhû*, G. νύμφη, O.H.G. *brût*, Lith. *marti*, O.S. *nevesta*.

In the last two points we have confined ourselves to reproducing the Indian and Italian parallels because we cannot regard the parallels adduced by Leist from Greek culture, at any rate as far as ritual is concerned, as in the least convincing. As part of the Greek wedding ceremonies not a single offering is mentioned in Homeric times, and only one in later times, the *προγάμια, προτέλεια*, which was made on the actual day of marriage, and which was followed by a feast in the house of the bride's father.

Touching the points of agreement between the Indians and Italians—so far as they are of a ritual character—the answer to the question how far they are actually connected, or how far they are the result of independent though similar evolution, will depend whether and in what measure we can venture to ascribe fixed ritual institutions in general to that primeval period in which no separate Indo-Roman or Indo-Greco-Roman development can so assumed to have taken place (above, p. 242). For instance, the parallel, say, between the *pomoerium* of the Romans and the *vrajá* of the Indians (*vrāga* it cannot be, the outcome of actual connexion, because offerings of this kind necessarily imply a stage of settled agricultural, not pastoral, life; and the latter is the only mode of national life which can be shown to have prevailed when the Indians and the Romans were still connected together.

A totally different direction is followed by Leopold v. Schroder's investigations, as the title of his book indicates. He undertakes a comparison of Indo-European marriage ceremonies with those of the Finnic-Ugrians, especially of the Esthonians, and finds that they entirely agree. At the same time he does not close his eyes to the fact that many usages, in which the Indo-Europeans and the Finns agree, are also to be found amongst other widely-removed peoples, and consequently suggest that the parallelism in their evolution is casual. Only, he comes on p. 202 to the conclusion, "that whereas we find isolated instances of the recurrence of one custom or another amongst this people or that, we never come across the whole series of customs described, or even of a considerable portion of them,—save only amongst the Indo-European and Finnic-Ugrian peoples."

Being rightly convinced that the two families of speech have no genealogical connection with each other (*cf.* above, p. 195), Schroder finds the explanation of the above fact in the assumption that the Indo-Europeans and Ugro-Finns occupied contiguous abodes in the primeval period. Further, in later times, individual Finnic peoples were exposed to the influence of individual Indo-European peoples.

Our opinion is that Schroder has made out a case of some probability for his views. We are the more inclined to this opinion because, in the course of our narrative, we too have come across cases of probable connection, both in culture and language, between the Finns and Indo-Europeans (*cf.* above, pp. 306, 318, 321).

The notion of "husband" was expressed in the original language by a word which designated the married man as lord and master: Sans. *páti*, "lord, master, husband," *dámpati*, "house-master,"

Zend *paiti*, G. πόσις, "husband," δεσπότης* = Sans. *dampati*, "house-master" (Lat. *potestas*, and so on), Goth. *-faþs*, *bruþ-faþs*, "lord of the bride or young woman," Lith. *pàts*, "husband, married man."

On the other hand, the wife is realistically conceived as the "childbearing woman:" Sans. *gnâ*, Zend *ghenâ*, G. γυνή, βανή (also μνάομαι, "I take a wife," and the hitherto unnoticed Hesychian ἀ-μνά-μους · τοὺς ἐγγόνους = "from the same woman"), I *ben*, gen. *mnâ*, Armen. *kanai-k'*, "women," O.S. *žena*, Pruss. *genno*, Goth. *ginô*. That this stock is to be separated from the root *ĝen*, "gigno," seems to me indeed improbable, in spite of Brugmann (*Grundriss*, i. 345), though a satisfactory explanation of the gutturals in these words is not yet forthcoming (*cf.* J. Schmidt, *K. Z.*, xxv. 129). A formation peculiar to Indo-Iranian is Sans. *strî* = Zend *stri* (*s-tr-î*), probably belonging to Lat. *sero*, *sa-tor*, "begetter."

The wife's bosom in which the lord of the house lays the seed of a legitimate progeny is identified by the rude conception of the primeval period with the wife herself; and it seems to me not improbable that this mode of thought is at the bottom of the remarkable fact that in several instances the names for the womb are formed on the same analogy, as regards suffix (G. γαστήρ, Lat. *ven-ter*) as the names of kin. *Cf.* also above, G. ἀδελφός, ὁμογάστωρ, &c., and Homeric expressions such as ἐννεακαίδεκα μέν μοι ἰῆς ἐκ νηδύος (= ἰῆς ἐκ γυναικός) ἦσαν (*Il.*, xxiv. 495).

The relation of man and wife then is characterised by language as that of "master" and "bearer of children." The question arises whether we can learn anything further from language and tradition about the relation of the married couple to each other.

There seems to be a tendency at present in favour of the assumption that the position of the Indo-European woman was a relatively high one. This proceeds partly on the much-discussed equation, Sans. *pátnî*, "lady, wife" = G. πότνια (also δέσποινα, which however has no Sanskrit counterpart, **dampatnî*), and partly on the circumstance that in the earliest periods of antiquity the wife appears as sharing sacrifices with her husband, both amongst the Indians and the Romans. How slight the weight is of this equation I have already (p. 141) indicated.† As for the common sacrifices of the married pair, on the one hand it must not be forgotten that no parallels are forthcoming amongst the North European peoples—which makes inferences as to the primeval period very suspicious—and on the other it is advisable to enquire whether indications are not to be found that this partnership in sacrifice only grew up during the separate evolution of the peoples mentioned. Anyhow, both amongst the Indians and the Italians

* Others compare δεσπότης : Sans. *jâspati*, O.S. *gospodĭ*, and interpret it as "lord of the progeny" (*jâs-*); *cf.* J. Schmidt, *K. Z.*, xxv. 15, *f.*

† In the same way that *pátnî* may have originally been a meaningless feminine to *pátis*, so is Goth. **fraujôn* (O.H.G. *frouwa*) : *frauja*, "master" (cf. *svaihrô* : *svaihra*, *arbjô*, *ni-jô*). Following a suggestion of Kluge's, I would connect Goth. *frauja* with Sans. *pûrva* (**pṛ-vo*). The fundamental meaning would then be "the previous, the first."

there are, as it seems, particularly important sacrifices from which the presence of women was strictly excluded. In Italy this is the case with the offering to Mars *pro bona valetudine* ("mulier ad eam rem divinam ne adsit neve videat quomodo fiat," Cato, *De Re Rust.*, c. 83), in India with the Pravargya ceremony—the Çatapatha Brâhmana enjoins: "When the Pravargya ceremony is being performed let the wife (of him offering the sacrifice) veil her head." Cf. *Henrici Jordani Vindiciæ Sermonis Latini antiquissimi*, *Regimontii*, 1882 (with R. Garbe's communications).

I believe, then, that this kind of argument does not suffice to establish the view that the Indo-European woman, though under the *patrium* of the husband, was yet on an equality with him. I am rather of opinion that everything we know of the primitive conditions of marriage amongst the Indo-European peoples—so long as we do not constrain our gaze to remain fixed on the advanced views to be found in Homer, in the Indian Sûtras, and the somewhat idealising *Germania*—everything, I say, indicates that the power acquired by the man over the wife, through purchase or capture, was in the primitive period no empty legal form, but a hard and cruel reality against which our modern sentiment rises in revolt. I am further of opinion that the simplest explanation of the absence, already alluded to, of an Indo-European name for the wedded pair is that the modern view—according to which marriage is identity of interests, supported by law, church, love, and custom—was foreign to the primeval period, when the man was absolute master, and the wife, acquired by capture or purchase, merely a servant and bearer of children.

To begin with, it was not until after the separation of the peoples that the purer form of monogamy was evolved from the primeval polygamy.* We still come across undoubted cases of plurality of wives in the hymns of the Rigveda,* especially in the case of kings and great men (*cf.* Zimmer, *Altind. Leben*, p. 324, f.; Geldner, *B. B.*, ix. 327, on Sans. *Jahnâ*, "wife"). Herodotus (i. 135) expressly states of the ancient Persians: γαμέουσι δ' ἕκαστος αὐτῶν πολλὰς μὲν κουριδίας γυναῖκας, πολλῷ δ' ἔτι πλείτυς παλλακὰς κτέονται. Amongst the Teutons at the beginning of their history we still come across plurality of wives as the exception in the West (Tac., *Germ.*, 18), and as the rule in the North (Weinhold, *Altn. Leben*, p. 219). As regards the Gauls, again, in Cæsar (*B. G.*, vi. 19: "Et cum pater familiâ illustriore loco natus decessit, propinqui conveniunt, et ejus de morte si res in suspicionem venit, de uxoribus in servilem modum quæstionem habent") the passage seems to point to polygamy. Or how else is the plural *uxoribus* to be understood?

Indeed, as the ancient Indo-European custom was for the wife to come into the possession of the husband by purchase, it is hard to see why there should have been any hesitation about obtaining

* Even in later times in India the law did not limit the number of wives; though the custom of being content with one legitimate spouse grew. The joint sacrifices of man and wife seem to have had some influence here (*cf.* Jolly, *loc. cit.*, § 18).

a second or third wife in the same way—whether because one wife was insufficient for the main object of ancient wedlock, viz., obtaining male progeny, or because the growing wealth of the owner necessitated more work and more supervision, or because it was desirable to form fresh family connections.

It will, however, be well not to imagine that polygamy flourished to any great extent in the primeval period, for it is obvious that the desire to possess several wives, who had first to be purchased and then to be maintained, could only be realised by the rich. Usually a second wife would only be taken in default of children, or of male children. It is interesting to observe that from this point of view bigamy is permitted, inasmuch as a substitute for the wife (*namiestaren*) is allowed, amongst the southern Slavs to the present day. A vivid account of the proceedings in such cases is given by Krauss, *loc. cit.*, p. 228. As to plurality of wives amongst Slavonic grandees, *cf.* Krek, *Lehrb.*², 362.

But even when the cause of the childlessness was conceived to be in the husband, the primeval period seems to have been provided with a means to furnish the house with legitimate children. Amongst Indians, Greeks, and Teutons we find the rude custom that the husband may obtain progeny from his wife by means of a substitute, who was originally perhaps the husband's brother (*levir*, whence *levirate*); *cf.* Leist, *Altarisches Jus Gentium*, p. 109; *Gräco-italische Rechtsgeschichte*, p. 46; Grimm, *R. A.*, p. 443. At any rate, such a custom seems to me to fit in excellently with the Indo-European view of marriage. The wife belongs to the man, body and soul, and what she produces is his property, as much as the calf of his cow, or the crop of his fields. The husband therefore regards the child of his wife and another man as his own, provided only it was begotten with his will. The same conception of the husband's absolute right of property in the wife accounts for the Scandinavian's offering the marriage bed to his guest (Weinhold, *Altn. Leben*, p. 447).

It is part of the same circle of ideas, that the naive feeling of antiquity saw nothing morally objectionable in a married man's having to do with other women, whereas adultery in the woman was punished with the severest penalties, because it was an infringement of the man's right of property. The Homeric hero speaks without shame of his concubines; Agamemnon (*Il.*, ix. 128, *ff.*) promises the wrathful Achilles seven Lesbian women in addition to Briseïs, whose bed he solemnly asseverates he has never approached, and twenty of the most beautiful Trojan women after the capture of Troy, and finally his own daughter (*ἀνάεδνον*) as lawful wife. The position of the *ὠνητή* or *δορίκτητη πάλλαξ* is generally unquestioned by the side of the *κουρίδιη ἄλοχος*. The practice of putting women taken in adultery to death has left no traces in Greece; moral death, *atimia*, was substituted (*ἀτιμῶν τὴν τοιαύτην γυναῖκα καὶ τὸν βίον ἄβιωτον αὐτῇ παρασκευάζων*). In Cyme the adulteress was taken through the town on a donkey, and then exposed on a stone (K. F. Hermann, *Lehrbuch der Griech.*

R. A. herausg. v. Th. Thalheim., p. 18). The husband demanded his *Ehra* back (above, p. 382), and might slay the adulterer taken *in flagranti** (Hermann, *loc. cit.*, p. 37, note 5).

Precisely the primitive point of view is preserved in the legal conception of ancient Rome, as presented by Cato in *Gell.*, 10. 23: "In adulterio uxorem tuam si prehendisses, sine iudicio impune necares (until the lex Julia de adulteriis); illa te, si adulterares, sive tu adulteraret, digito non auderet contingere, neque ius est." (Marquardt, *Privatleben*, p. 65).

The case is the same amongst the Teutons of the North (Weinhold, *Altn. Leben*, pp. 248, 250). The husband as allowed the most unrestricted concubinate, the woman taken in adultery may be put to death along with her paramour. Somewhat milder, and answering to the same thing as the Greek *atimia*, is the punishment awarded to the adulteress amongst the West Teutons according to Tacitus (*Germ.*, ch. 19): "Paucissima in tam numerosa gente adulteria, quorum pœna præsens et maritis permissa: accisis crinibus, nudatam, coram propinquis expulit domo maritus ac per omnem vicum verbere agit." On the other hand, it is ordained by the *Lex Visig.*, iii. 4. 4 (Grimm, *R. A.*, p. 450): "Si adulterum cum adultera maritus vel sponsus occiderit, pro homicidio non teneatur."†

Again, according to the customary law of the southern Slavs, 'the injured' husband may kill the adulteress and her paramour on the spot. Occasionally in the folk songs the woman is doomed to be torn to pieces by horses (Krauss, *loc. cit.*, 511, 566).

In ancient India concubinage and polygamy can seldom be sharply distinguished. I have no information from ancient sources as to the treatment of the adulteress. In the later law-books (Jolly, *loc. cit.*, § 12) adultery in the woman is naturally a legitimate ground for putting her away. Further, she is to be supplied only with bare necessaries, her hair is to be cut (*cf.* Tacitus, above), she is to be badly clothed and kept to the lowest kind of servile work.

But the despotic nature of the husband's rule over the wife comes out almost more clearly in the custom, common to the Indians, Romans, and Teutons, according to which it lay with the father to "take up" (*tollere, suscipere*) the child his wife bore to him, and thereby to decide whether it should live or die, *i.e.*, be exposed. Amongst the Teutons it is impossible to doubt that the decision depended solely on the will of the father† (Grimm, *R. A.*, p. 455; Weinhold, *Altn. Leben*, p. 260). In ancient Rome the father's right to sell his child or put it to death is to be regarded as following from the *patria potestas* (Marquardt, *Privatleben*, pp. 3, 81).

* On the very instructive provision of the Gortyna code, *cf.* F. Bücheler and E. Zitelmann, *Das Recht von Gortyn*, p. 101, *ff.*, 1885.

† The clause in *Germ.*, c. 18, "Numerum liberorum finire . . . flagitium habetur," is very remarkable, and at absolute variance with the rest of our information.

Things are not quite so clear amongst the Indians. A passage in the Rigveda* (v. 2. 1) may, according to Ludwig (*Rigveda*, vi. 142), imply that in India too the mother "gives" the child to the father; and a passage in the *Taittiriya-Samhitá* (Zimmer, *Altind. Leben*, p. 319; Ludwig, *Rigveda*, v. 568) mentions the exposure of daughters, and implies the custom already mentioned by the child taken up by the father. When, on the other hand, the Sûtras expressly mention the father and mother as those who have the power to give, to sell, and expel their sons (*cf.* Leist, *Altar. Jus Gentium*, p. 115), we shall scarcely go wrong if we consider this provision, not as anything primeval, but as simply the consequence of the gradually growing view that man and wife were the two halves of one and the same body (*cf.* Jolly, *loc. cit.*, p. 137).

In Greece, too, ἐγχυτρισμός, "exposure in earthern vessels," was very widely spread, as was the sale of children, which was not forbidden by law even till Solon's times (Plutarch, *Solon*, 23. 13). In Thebes alone exposure was forbidden by a strict law, though sale was allowed instead, in case of extreme poverty (Ælian, *V. H.*, ii. 7). That the will of the father (not of the two parents) is to be regarded as exercising the final decision as to the life or death of the child can scarcely be doubted, although it was limited at an early period by the necessity of consulting the sib or a family council. In Sparta, where from a certain age the child ceased to belong to the parents and become the property of the State, τὸ γεννηθὲν οὐκ ἦν κύριος ὁ γεννήσας (or he was therefore elsewhere) τρέφειν, but τῶν φυλετῶν οἱ πρεσβύτατοι decided whether the child should be raised (Plutarch, *Lycurgus*, xvi.); similarly at Rome the child had to be shown, before exposure, to πέντε ἡβήσασι τοῖς ἔγγιστα οἰκοῦσι (Dion., *Hal.*, ii. 15).

Besides children who were weak, sickly, and of doubtful legitimacy, it was generally daughters—who were a "grief" to the Vedic world (*cf.* Zimmer, *Altind. Leben*, p. 320)—that were exposed. The same sentiment as to daughters pervades Greek (Hermann-Blümner, *Privatalt.*, p. 282), Roman (Marquardt, *Privatleben*, p. 3), and Teutonic (Weinhold, *Altn. Leben*, p. 260) antiquity, and is not ill adapted to throw a streak of light on the primitive view of women.

Finally, the character of Indo-European marriage equally warranted the master of the household originally in exercising the same right of sale and death over the wife herself as over the children (*cf.* as to the Gauls, Cæsar, vi. 19, "viri in uxores sicut in liberos vitæ necisque habent potestatem;" as to the North Teutons, Weinhold, *Altn. Leben*, p. 249; as to the Romans, Rossbach, *Röm. Ehe*, p. 20). But this hardship was the first to be alleviated, owing to the sympathy of the wife's family in the fate of their blood-relation.

The closest connection, in my opinion, subsists between the house-master's unrestricted right of property in his wife and the awful doom which in Indo-European antiquity awaited the sur-

* *Kumáram vátá yuvatíḥ sámudhnam gárbham bibharti na dádhati yáve.*

living wife, the widow (Sans. *vidhavá*, Lat. *vidua*, I. *fedh*, O.S. *widowa*, Goth. *viduvô**). It is no longer possible to doubt that ancient Indo-Germanic custom ordained that the wife should die with her husband. This custom has its origin in part in the wish to provide the deceased in his grave with everything which was dear to him in life; and partly was designed to make the life of the house-father safe on all sides (*cf.* Cæsar, *B. G.*, vi. 19), and to render him an object of perpetual care and anxiety to his family. The custom of burning widows, among the northern Indo-Europeans, has been exhaustively treated before now by V. Hehn (p. 473, *f.*).

Amongst the Hindus, even in the time of the Rigveda, milder customs prevailed, as is shown by a hymn (x. 18, 7), in which the following words of comfort are spoken to a wife mourning over her husband:—

> "Arise, O wife, to the world of life;
> Fled is his spirit by whom thou sattest,
> Who took thy hand and wooed thy heart;
> Thy marriage with him is ended."
>
> (Geldner-Kaegi, 70 *Lieder*.)

Zimmer, however (*Altind. Leben*, p. 329), rightly points out that this passage only shows that the burning of widows was not usual in the home of the poet who wrote the lines. In the Atharvaveda, on the other hand, the custom is designated primeval (*dhárma purâṇá*). The fact, again, that it was retained by the Brahmins shows that we have here much more probably to do with an institution hallowed by antiquity than a capricious innovation of the priestly caste. As to the position of the widow in later times in India, see Jolly, *loc. cit.*, §§ 14–17.

When sentiments had become more humane, traces of the old state of things still showed themselves in the prohibitions issued against the second marriage of widows. Such was the case amongst the West Germans (Tacitus, *Germ.*, c. 9, *in quibus tantum virgines nubunt*), and also in ancient Greece (*πρότερον δὲ καθεστήκει ταῖς γυναιξὶν ἐπ' ἀνδρὶ ἀποθανόντι χηρεύειν*, Paus., ii. 21. 7).

In objection to our view of the original position of the Indo-European wife, we may be asked, if it is correct, what was the difference between the Indo-European wife and the female slave, whom we must imagine on general grounds, if not on the evidence of language, to have existed in the Indo-European family? To

* It is customary to connect Greek *ἴθεος*, "young man" ("widowed"?), with these words (?).

When Krek (*Einleitung*, p. 55) alleges that, if our assumption that widows were burnt in the primeval Indo-European period were true, there could be no Indo-European word for widow, we must answer first that for the interval between the death and the solemn burial of the husband a name would be necessary for the wife or wives left by him, and next that we need not regard the practice of putting widows to death as a rule without exceptions. We may imagine, for instance, that a widow of a man who died without issue was allowed to contract a "levirate marriage" in order to raise up seed to the dead man. *Cf.*, indeed, Rigveda, x. 40: "Who puts you to bed, as the widow does the brother-in-law, the wife the husband in their common abode?"

this we would answer that the distinction between the two must have been at once very fine and very important: very fine, inasmuch as we cannot imagine the sphere of the Indo-European wife to have practically differed from that of the slave-girl: very important, inasmuch as the legitimate progeny obviously could only be obtained from a legitimate wife, and the latter, according to the view that universally prevailed amongst the ancient Indo-European peoples, could only be drawn from amongst the free members of the tribe, who were bound together by one tongue, one faith, one law. This, in the most ancient times, at once gave the wife the advantage over the slave-girls and concubines of the house, and provided the basis on which might be developed the noble view of the position of women that characterises most Indo-Europeans even in early stages of civilisation.

Tempting as it would be to discuss a series of other points of importance in the history of the Indo-European family, such as the most ancient testamentary arrangements or the question whether blood-relationship prohibited marriage, &c., we now

We may, however, give in a note some facts on the subject: in the Avesta the marriage of kin is lauded as a pious and meritorious work. "The most pious of the pious is he who remains faithful to the good religion of the worshippers of Ormazd, and who in his family fulfils the sacred duty of wedding kin" (W. Geiger, *Ostiran. Kultur*, p. 249). Cambyses and other Persian kings married their sisters.

In the well-known song of the Rigveda (x. 10) Yami appears in support of the marriage of brother and sister, while the opposition is personified in Yama. Buddhist legends mention various cases of the marriage of brother and sister. In the older literature marriage with the daughters of the mother's brother and sons of the father's sister are permitted (Weber, *Indische Stud.*, x. 75). Subsequently, the prohibition especially of the marriage of Sapindas becomes more strict (Jolly, *loc. cit.*, § 5, 2).

In Homer, the marriage of brother and sister, strictly speaking, is to be found only in myth. Cf. the example of Zeus and Hera, Diomedes married his mother's sister, Alcinous his brother's daughter (Buchholz, *Realien*, ii. 2, 19.) Marriage with half-sisters on the father's side (not on the mother's) was also allowed in later times (Hermann-Blümner, *Privatalthm.*, p. 261).

On the other hand, amongst the Romans it was not customary for the woman to marry out (*enubere*) of the *gens*; but alliances between persons under the same *patria potestas*, even to the degree of cousins, were *nefaria et incestae nuptiae*. This was relaxed in later times (Marquardt, *Privatleben*, p. 39).

It is hard to discover what was the original state of things amongst the northern Indo-Europeans, owing to the early spread of the prohibited degrees of the church.

It is further to be noted that ancient prohibitions of marriage within certain degrees do not seem to have been based on observation of any of the consequences asserted by modern lunacy doctors to follow on such marriages, in this connection a passage of Plutarch's *Moralia* is instructive:—

Plut., *Quaest. Rom.*, 108. Διὰ τί δὲ τὰς ἐγγὺς γένους οὐ γαμοῦσι; πότερον αὐξειν τῶν γάμων βουλόμενοι τὰς οἰκειότητας, καὶ συγγενεῖς πολλοὺς ἐκκτᾶσθαι, διδόντες ἑτέροις καὶ λαμβάνοντες παρ' ἑτέρων γυναῖκας; ἢ φοβούμενοι τὰς ἐν τοῖς γάμοις τῶν συγγενῶν διαφορὰς, ὡς καὶ τὸ φύσει δίκαια προσαπολλυούσας; ἢ πολλῶν βυθῶν τὰς γυναῖκας ὁρῶντες δι' ἀσθένειαν δεομένας, οὐκ ἐβούλοντο τὰς ἐγγὺς γένους συνοικίζειν, ὅπως ἂν οἱ ἄνδρες ἀδιαπτῶς αὐτὰς, οἱ συγγενεῖς βοηθῶσιν. It presents the most various conjectures as to the reasons of the obvious difference between the views of the Greeks and the Romans on this point, and yet makes no mention whatever of physiological considerations.

break off this subject in order to turn our attention to certain political and social organisations of wider extent than the family amongst the Europeans.

III. Family and State.

That the most ancient forms of government amongst Indo-European peoples are based on the organisation of the family is an established fact. It is not, however, so much our purpose here to trace in detail the process by which the state was evolved from the family, as to discuss how far this process may be conjectured to have been carried in the primeval period. As far as the evidence of language is concerned this is not easy, for, as we remarked on p. 140 above, all equations referring to the political life of the Indo-Europeans possess such elasticity of meaning, that it is difficult to determine their original sense.

From what has already been said, the Indo-European family is best conceived as resembling the Roman *familia*, i.e., as consisting of the women, children, and slaves under the *potestas* of a single house-master. The wife came into the "hand" of the house-master by capture or purchase, *in manus venit*, as it is put in the Roman phrase, which is, perhaps, connected in fact and in etymology with the Teut. *mundium* (from O.H.G. *munt*, "protection," "hand;" *munt-boro*), which again expresses the same idea. The agnatic exclusiveness of the Indo-European family, as regards those outside it, and the despotic power exercised within its limits by the man over his wives and children have already been described.

The question now presents itself, how many of the descendants πρὸς πατρός were included in the primitive family? Amongst various Indo-European peoples, especially the Indians, Greeks, and also the Teutons, a custom is found to exist, in the most ancient times, in accordance with which, when a son marries he leaves the paternal house, kindles a hearth-fire of his own, and founds a new home. Leist (*Gräco-italische Rechtsgeschichte*, p. 64; *Altar. Jus Gent.*, p. 34) regards this as the original practice, for he will not allow that the primeval period had any "patriarchal character" whatever. I must, however, confess that though such a speedy local dissolution of the Indo-European family is conceivable at a higher stage of culture, when permanent agriculture and private property in land are known, I cannot imagine it as existing in nomad or semi-nomad life. I am, therefore, more inclined to look for the original type of the Indo-European family in another organisation, the existence of which is authenticated in the case of many Indo-European peoples, though it is wholly ignored by Leist, that is, in the joint family of the Hindus, the Irish Sept (Maine, *Lectures on the Early History of Institutions*, p. 79, *f.*), and above all in the Slavonic "House-Community."

Such a house community (called amongst other things *zadruga*) consists, according to Krauss' description (*Sitte und Brauch bei den Südslaven*, p. 64, *ff.*), of a body of about sixty or seventy members,

who are blood-relations, to the second or third degree "*of course only on the male side.*" At their head is a house-administrator (usually *domačin*), who is indeed paid the greatest respect, but who is not to be regarded as the master and owner of the family property, like the Roman *pater familias*. The family property is rather the joint property of all the male adult members of the household.

The house-community dwells together, indeed; but the real house (*ogništije*, "the place of the fire") is occupied solely by the house-administrator and his family, whilst round it in a horseshoe crescent are grouped the apartments, which are only bedrooms, of the other members. Meals, which it is the business of the *domačica* to provide, are taken in common. The men eat first, then the women consume what is left.*

That we are, however, justified in regarding this arrangement as the original Indo-European practice, follows from the fact that traces of it have been preserved more or less clearly in Greek and Roman antiquities also. In Rome it seems to have been by no means uncommon for blood-relations to dwell together. It is told of M. Crassus that he was brought up in a little house with two brothers. The brothers had wives, while their parents yet lived. And all sat at one and the same table (Plut., *M. Crass.*, i.). We need only allude to the sixteen Ælii: "Quibus una domuncula erat—et unus in agro Veiente fundus" (*cf.* for this and further, Marquardt, *Privatleben*, p. 56).

In Greece, a Homeric example of the joint family is afforded by Nestor's household. Various instances from Attic law are cited by Jevons in the paper already mentioned, "Kin and Custom" (*Journ. of Philol.*, xvi. 102, *ff.*). But it is amongst the Dorians that the original state of things is reflected with especial distinctness. In Sparta the indivisibility of the κλῆρος, which is not to be regarded as a new arrangement, but as the primeval form of property in land, compelled brothers to live together on the undivided heritage. The eldest was indeed the real heir, ἑστιοπάμων, and the others, married or unmarried, partakers and sharers in the use of the family property (*cf.* Leist, *Gräco-italische Rechtsgeschichte*, p. 78). If Polybius (xx. 6) here talks of polyandry and community of wives, it is, it seems to me, because he has misunderstood the ancient house-community. Possibly his statement is due to his having observed "that where several generations and households live together, there is a tendency to a certain licence and disorder in the relations of the sexes," as is expressly reported of the Russian *izbá* (*cf.* F. v. Hellwald, *Die menschliche Familie*, p. 509). The same explanation, I should be inclined to conjecture, will apply to other statements about polyandry amongst Indo-

* Separate meals for the two sexes, at any rate on festal occasions, seems to have been the primeval practice. It prevailed in the Teutonic world. *Cf.* Niebelungenlied (B.), 1671:—

Nâch gewonheite dô scieden si sich dâ;
Ritter und frouwen die giengen anderswâ.

In Homer, too, the women usually take their meals in their own rooms.

European peoples, *e.g.*, Cæsar (v. 14) about the ancient Britons: "Uxores habent dení duodenique inter se communes, et maxime fratres cum fratribus parentesque cum liberis;" and Herodotus (iv. 103) about the (Thracian?) Agathyrsæ: ἐπίκοινον δὲ τῶν γυναικῶν τὴν μίξιν ποιέονται, ἵνα κασιγνητοὶ τε ἀλλήλων ἐόντες πάντες ἔωσι καὶ μηκέτι ἐόντες πάντες γνησίου μηδὲ ἐχθρὸν μηδὲν χρήσωνται ἐς ἀλλήλους.

I am of opinion, therefore, that we shall be nearer the truth if we conceive the Indo-European family rather after the fashion of the Slavonic house-communities, than on the model of the later divided family—with this exception, that in the place of the South Slavonic house-administrator, we must imagine the stringent *patrium* of the Roman house-father, which indeed manifests itself much more decidedly in the Russian house-senior than in the South Slavonic *domaćin*.

When the house-father died all his rights went to the eldest son; especially were the women of the family, the mother and sisters, under his guardianship. This seems to have been the ancient Indo-Germanic system. Thus a Vedic hymn says: "Ushas (the dawn) bares her bosom to men as a maiden, who, having no brother, yields herself with the less reserve to her husband." So, too, among the Teutons, friendship is under the protection, not of her mother, but of her brother:—

Ir gilegen wîp ûf ir vride—
diu triuwe stât ir nâhe, der helde ellens (u. s. w.).

just as in the Roman family, after the decease of the father, the sons of the family had the *tutela* of the mother and sisters (Mommsen, *Römische Geschichte*, i. p. 59, 4th ed.; Eng. trans. pop. ed.: *History of Rome*, i. 60). In Greece, too, sons who had man's estate were κύριοι of their sister and widowed mother.

Hence a specially close connection between a sister's children and their mother's brother, their uncle. *Sororum filiis*, says Tacitus (*Germ.*, c. 20), *idem apud avunculum qui ad patrem honor*. In this connection, which finds such a simple explanation in the brother's importance in the family, I cannot trace any indication that community of wives was primeval, and that the children consequently belonged to the relations of the mother.

In spite of this prominent position of the mother's brother in the ancient Teutonic family, the *patruus* distinctly comes before the *avunculus*, the agnates before the cognates, in testamentary succession ("Si liberi non sunt, proximus gradus in possessione fratres, patrui, avunculi." *Germ.*, 20), which once more confirms our assumption that the organisation of the family was agnatic in the primeval period, and speaks equally clearly against Bachofen's theories (*cf.* Brunner, *loc. cit.*, p. 89).

It is a question what word was employed in the original language to designate the conception of family, which, as the facts of the case have shown us, existed. The individual languages seem to diverge widely. In Italian, the Umbrian *famedias*, Osc. *famela* (*famel*, "servus"), Lat. *familia* (*famul*) may be connected with the

Sans. *dhâman*, "place of abode, home, especially the place of the sacred fire, kinsmen, body of connected persons generally," &c. (*B. R.*); *cf.* also Osc. *faamat*, "habitat." In Teutonic the stem *hîw-*, *hîwa-* is mainly used to designate the members of the household: Goth. *heiva-frauja*, "house-master," A.S. *hîred*, *hîwræden*, "family," O.H.G. *hîrât*, "marrying," O.N. *hjû*, *hjôna*, "man and wife," "servants of the house," *hyske*, "family," A.S. *hîwan*, pl. "servants," O.H.G. *hîwiski*, "family, inmates," O.H.G. *hîun*, "married pair," "domestics," &c. This Teutonic stem *hîw-*, *hîwa-** exactly corresponds to Lat. *cîv-is*, the original meaning of which may have been "the individual *pater familias*" in his relation to the *civitas*.†

In Greek, the concept "family" is expressed by *οἶκος*, *οἰκέται*, *ὁμοστίνοι*, "companions at hearth," *ὁμόκαπνοι*, *κάπνος* (Aristotle, *Pol.*, 1. 2); and also by *πάτρα* = "the society under the power of the *πατήρ*" (*cf.* Gilbert, *Griech. Staatsalterthümer*, ii. 302). *Πάτρα* and the Lat. *familia* both show a tendency to widen their meaning so as to include the tribe (Mommsen, *Röm. Staatsrecht*, iii. 1, p. 10, note 2).

In the Veda, the word *dhâman*, already cited, is used for the family, as also *grhá-*, "house;" in the Avesta *nmâna*, amongst the ancient Persians *mâniya* is used.

It seems, therefore, almost impossible to establish a primeval term for the concept "family." However, if one remembers the primeval equation already mentioned, Sans. *dampáti-* = G. *δεσπότης*, Indo-E. **dems-poti-*, "pater familias," and if one reflects that the stem *dem-*, *domi-*, in Sans. *damá-*‡, in Lat. *domus*, in G. *δόμος* (*especially in the plural*) is used in nearly all Indo-European languages to denote the household, the family, it seems not improbable to me that in Indo-European the house-community was designated by **dem-*, **dmo-*, and the *pater familias* at its head by **dem-s poti-s*.

We have now to trace the further evolution of the family in the

* For the development of the meaning of the Teut. *hîwa-*, compare the passage in the *Germ.*, c. 20: "Dominum ac servum nullis educationis deliciis dignoscas: inter eadem pecora, in eadem humo degunt, donec ætas separet, ingenuos, virtus agnoscat."

† In the same way Lat. *quîris* and *cûria* seem to have originally meant "house-master," "society of house-masters." The latter (from **qoi-ria*) is connected with G. *κοι-ρανος*, O.H.G. *hî-r*, *hê-ro*; *quîris* (**qi-ro*) may be related in the way of vowel gradation to **qoi-ro*. *Cf.* Mommsen, *Röm. Staatsrecht*, iii. 1, pp. 5, *ff.*, 89 *ff.*

‡ On this word *B. R.* remarks: "The word in Sanskrit has no other derivation than from 1. *dam* ('compel'), and yet means the spot where a free man rules, dominion, jurisdiction over house and home. That it is not the building that is meant is shown by the usage of the word. If this is the right derivation, and, as can hardly be doubted, G. *δόμον* has the same derivation as *damá*, the former must no longer be referred to *δέμω*." We have the choice, it seems to me, between regarding the Indo-E. *domo-* either as first a building (*cf.* above, p. 241), and then as the sphere of a man's rights, or *vice versâ*, as first the sphere of a man's rights and then as a building—a choice which does not admit of decision.

Touching the remarkable *δόμος* in the sense of "family," compare what has been said above about the South Slavonic house-community's dwellings.

primeval period; and here, again, we shall start from the state of things found amongst the southern Slavs: for our opinion—to be supported by arguments shortly—is that here, in the mountains of Herzegovina and Crnagora, the original form of the Indo-European tribe and family has been preserved with almost absolute fidelity.

The intermediate link between the house-community described and the tribe (*pleme*) is here the *bratstvo*, "the brotherhood".

A *bratstvo* is formed, when the blood-brothers of a house-community separate, but still continue to form a political (territorial) and religious (common tutelary hero) organisation, possessing a common landed estate. Every *bratstvo* has its family legend in honour of the common ancestor.

The number of the members of a *bratstvo* varies from 30 to 800, which however only includes the men capable of bearing arms. These fight side by side in battle. The head of the *bratstvo* is chosen by the *bratstvenici*. He is the leader of the *bratstvo* in war, its political representative in peace, to some extent its judge and the leader of the public assemblies. In the latter, only the heads of households have a seat and vote, the rest simply have the right of declaration. The *bratstvo* has usually the exclusive occupation, according to its numbers, of one or more villages.

The *bratstvenici* regard themselves as bound to one another in respect of all things. This is particularly the case in the matter of blood-revenge. Marriage within the *bratstvo* does not seem to have been usual originally. A marriage makes all the *bratstvenici* of the young wife *prijatelji* "friends" of the husband's *bratstvo*.

The name of the *bratstvo* is derived from that of the common ancestor, and is added to the full name of the individual. Thus a man may be called: *Ivo Petra* (father) *Markova* (grandfather) *Jankovića* (house-community) *Kovačevića* (*bratstvo*).

Now, there can, in my opinion, be no doubt that the G. *φρήτρη* and the Lat. *gens* stand, or originally stood, on the same level with this South Slavonic *bratstvo*.

The original conception of the G. *φρατρια* has already been rightly recognised by Gilbert (*Griechische Staatsalterthümer*, ii. 303), when in opposition to the view expressed by Dicæarchus (Müller, *Fr. H. G.*, ii. 238) that the *φρατρία* was a religious organisation of families connected by marriage with one another, he very justly says: "But this explanation does not accord with the meaning of the word *φρατρία*, which is applied in the sense of *brotherhood* first to a body of brothers united by their common origin, and then, in the course of its advance and development, to their male descendants. *Φρατρία* accordingly can hardly have originally differed in meaning from *πάτρα* ('family') in its extended sense of the sib. And as a matter of fact the ramifications of the family do not spread, as Aristotle also points out, wider than the sib; for marriage, to judge from its original forms—capture and purchase—when it took place between members of two different sibs scarcely seems to have constituted any close connection between those sibs."

* *Cf.* Krauss, *loc. cit.*, p. 32.

In Homer the φρήτρη (*bratstvo*) is a subdivision of the φῦλον (*pleme*). The φρήτορες fight side by side, like the *bratstvenici*:—

> κρῖν' ἄνδρας κατὰ φῦλα, κατὰ φρήτρας, Ἀγάμεμνον,
> ὡς φρήτρη φρήτρηφι ἀρήγῃ, φῦλα δὲ φύλοις.
> (*Il.*, ii. 362.)

That man is originally ἀφρήτωρ (*cf.* Goth. *unsibjis*) who belongs to no sib, ἀνέστιος who belongs to no family (*Il.*, ix. 63, and above, p. 350). Unfortunately, we learn nothing more from Homer about the important and primeval institution of the φρήτρη. In later times it was incorporated in various ways in the organisation of the state (*cf.* Busolt, "Griech. Staats- und Rechts-alterth.," in I. Müller's *Handbuch*, iv. 1. 20).

The common ancestor of the *bratstvo* or *pleme* calls to mind the ἥρως ἐπώνυμος of the Cleisthenean tribes.

The Lat. *gens* corresponds to the South Slav. *bratstvo*, and G. φρήτρη in their original significance.* "The etymology of the word is transparent: it is based on the notion of procreation, and that in the legal sense of the act which gives the father authority over the son. Hence the two ideas of the family and of the sib: the former consists of the free persons under the authority of a living ascendant, the latter of those free persons who would have been under such authority, had no death taken place." The mark of the sib is the *nomen gentile*, the name of the common ancestor, which, like the name of the *bratstvo*, is added to the name of the individual: *Qu. Fabius Quinti* = Quintus of the Fabian *gens* in the *potestas* of *Qu.*† The members of the sib are called *gentiles*, also *patres*, "house-fathers," and *patricii*. They are divided in Roman testamentary law into *sui*, *adgnati* (with assignable *gradus*), and the other *gentiles*. The ancient political significance of the *gens* was lost in that of the state; and its legal sphere was limited to private life, to the law of property and of ritual. In the former respect the *gens* collectively became the depositary of the land-laws (Mommsen).

Coming to the Teutons, we have to mention the *gentes cognationesque* and the *familiæ et propinquitates* (*cf.* above, p. 289), to which, according to Cæsar (vi. 22), the common arable-land was allotted by the *principes* and *magistratus*, and which according to Tacitus (*Germ.*, 7), like the Slav. *bratstvenici* and the Homeric φρήτορες, formed a *turmam* or *cuneum* in battle.

That the Teutonic sib (Goth. *sibja*, *knops*, also *slahta*, *fara*, *chunni*), as long as it was an agrarian and military unit, is to be

* *Cf.* Th. Mommsen, *Römisches Staatsrecht*, iii. 1, p. 9, *ff.*

† In Indo-European each individual man, as is well known, enjoyed an appellation, which usually was a very sonorous compound (Sans. *Kshémarája* = O.H.G. *Heimrich*, Sans. *Satyaçravas* = G. Ἐτεοκλῆς, Sans. *Dêvadatta* = G. Διόδοτος); *cf.* A. Fick, *Die griech. Personennamen*, Göttingen, 1874. From the agreement of Greek and Teutonic, we may perhaps infer that the name of the father played its part in the son's appellation, in that one member of the father's compound name was reproduced in the compound name of the child, *e.g.*, Δινο-κράτης, son of Δινο-κλῆς, *Walt-bert*, son of *Wald-ram* (*cf.* Brugmann, *Grundriss*, ii. 1. 32).

conceived as having been purely agnatic, seems to me to be perfectly self-evident. For how could the unity of the sib be maintained, if relationship on the female side had been regarded as constituting a bond of kindred? Brunner rightly calls attention (*D. R.*, p. 80) to the agnatic character of the Teutonic tribal legend (Manus and the descendant of his three sons, Ingväonen, Istväonen, Herminonen). I, therefore, entirely agree with the clear definition of the Teutonic *mæg* given by Rosin, *Der Begriff der Schwertmagen*, p. 50, Breslau, 1877. According to this authority, in the purely agnatic *mæg*, the character of which became gradually obscured by the "ever-growing respect paid to kinship through the female side," the sword-kin, the spear-kin, and lance-kin, simply mean the male members of the sib, the spindle-kin, distaff-kin, and play-kin, the female members.

The primitive Teutonic suffix expressing the connection of the individual with a sib, was *-inga*, *e.g.*, O.N. *Ylfingar*, A.S. *Wylfingas*, M.H.G. *Wülfinge*. The transition of the sib communities (*gentes cognationesque*) into local organisations is admirably indicated by the employment of this suffix to denote the inhabitants of a district or town, *e.g.*, A.S. *Centingas*, *Idumingas*, &c. (Kluge, *Nominale Stammb.*, § 26). The case is the same when Attic demes are named after a sib (*Philaidai*, *Paionidai*, *Butadai*, like Ἀτρείδαι, &c.); for the village community (κώμη) is nothing but the sib or φρήτρη become a local habitation.

In Asia, Herodotus divides the Persians into numerous γένη, such as the Πασαργάδαι, Μαράφιοι, Μάσπιοι. These γένη, again, are divided into the φρήτρη with which we are familiar. Such a φρήτρη of the Πασαργάδαι were the Ἀχαιμενίδαι, from whom the Persian kings were descended (i. 125). In the language of the cuneiform inscriptions, such a φρήτρη is called *vith*, in the Avesta *vîs*, "sib, village," in nomad life the *clan*, on which the modern organisation of the Afghans is based (W. Geiger, *Ostiran. Kultur*, p. 425, *ff.*). In the Rigveda *viś*, as it seems, frequently means a combination of several sibs: the individual sib as a settlement is called *grâma* and *vrjâna*, as a community *jánman*. The wider and the narrower term alike is used in a military sense also (Zimmer, *Altind. Leben*, p. 158, *ff.*).

The question now is what appellation may have established itself in the original language for the sib and the clan. The word for a body of persons bound together by kinship or neighbourhood, which is most widely spread in the Indo-European languages, and the most tenacious of life, is one already mentioned in some of its forms: Sans. *viś*, O.P. *vith*, Zend *vîs*, G. Fik in τριχάϊκες.*

* *Od.*, xix. 177:—

Δωριέες τε τριχάϊκες δῖοί τε Πελασγοί.

Hesiod, Fr. vii.:—

πάντες δὲ τριχάϊκες καλέονται·
οὔνεκα τρισσὴν γαῖαν ἑκὰς πάτρης ἔδασαντο.

Were the Θρή-ικες, Θρῆϊκες also, possibly the "four-clanned"? θρα-

(also οἶκος = Sans. *vēçá*), Lat. *vicus*, O.S. *visi*, Lith. *wiēsz* (in *wiēszpats*), Goth. *veihs*, I. *fich* (Corn. *gwic*), Alb. *vise*.

I am of opinion that this was the original term for the sib, so far as it required to be designated as a settlement (Sans. *viç*, "enter, settle") on a common pasture-ground. This, the original meaning, is most faithfully preserved in Iranian. In Sanskrit, as also in the G. Fik, it has extended its meaning so as to designate the canton. In the Lat. *vicus*, Goth. *veihs*, O.S. *visi*, Corn. *gwic*, which practically mean the village, the natural and almost inevitable change of meaning has taken place: the settlement on a common pasture-ground has become a settlement on common arable-land, the sib village; Sans. *grāma*, G. κώμη (according to Aristotle, the stage intermediate between οἶκος and πόλις) = Goth. *haims*, Lith. *kēmas*, O. Pr. *caymis*.*

If this is correct, we get the following stages of evolution in the primeval period:—

Dem-, *domo-*, "family" (joint family), *dem-s-poti*, "pater familias."
Vik-, *vik-*, "sib" (as a settlement), *vik-poti*, "sib-master" (Sans. *viç-páti*, Zend *vispaiti*, Lith. *wiēszpats*).

In addition to the last equation, in which the sib is regarded as a settlement, as we have said, there may have been other names in the primeval period which referred rather to the sib as a community of kinsmen. In this sense such words may have been used as Sans. *jána*, G. γένος, Lat. *genus*, O.H.G. *chunni*, or Goth. *knoþs*, O.H.G. *chnuot*, *chnuosti* = G. γνωτός, "consanguineus," "brother" (*cf.* φρήτρη : *frater*).

The assembled kinsmen were perhaps originally designated by the Goth. *sibja*, O.N. *Sif*, "goddess of the family and marriage" = Sans. *sabhā*, "assembly house" † (*cf.* above, p. 34 ‡). Finally, we have yet to mention an equation which belongs here, Longob. *fara*, "sib" (Paul., *Diac.*, ii. 9, also "a division of an army," O.H.G. *fara kisez* = *castrum*, Burg. *faramanni*), which I derive from **pazá*, and compare with G. πᾶός, πηός, "relation," παῶται, "συγγενεῖς, οἰκεῖοι" (Hesych.), and Lat. *pāricida*, *parricida* (*pāzá* : *pazá*). Accordingly, I, with Brunnenmeister (*Das Tötungsver-*

"four:" the aspirate may be due to the spiritus asper in the middle of the word (*cf.* G. Meyer, *Gr. Gr.*², p. 209). As to τρᾱ = "four" (τράπεζα), *cf.* J. Schmidt, *K. Z.*, xxv. 43, *ff.*; *cf.* further, A. Fick, *B. B.*, iii. 168.

* This change of meaning naturally frequently repeats itself. Thus the Teutonic *fara*, *mæni*, &c., originally names for bodies of kinsmen, come to be applied to local divisions (*cf.* Brunner, *R. G.*, p. 84).

The transition is in the opposite direction, from the locality to the community, in the Teutonic words: O.H.G. *dorf*, A.S. *þorp*; Goth. *þaúrp*, "arable-land." *Cf.* also Cymr. *tref*, "village" (*Attrebates*), and also Lat. *tribus*, Umbr. *trifu*, "part of the common fields, common field" ("community"). On this word, *cf.* Mommsen, *Röm. Staatsrecht*, iii. 1. 95.

† Some compare O.S. *sebrŭ*, "free farmer," here also. The fundamental meaning would then be "one of the sib in a farming village-community;" *cf.* also above, p. 350.

brechen im altröm. Recht, Leipzig, 1887), regard the latter as the "murderer of a kinsman." *

Having discovered in the *vik-es* the most ancient and tenacious political organisation of the Indo-Europeans, we may venture to consider that in the *vik-es* resided the power of the law, also, which afforded the individual protection to life and limb. The solidarity of the sib, as we have already intimated, is shown not least strikingly in the obligation of the blood-feud, which forms part of the conception of the sib in relation to other sibs. This most primitive form of penal law can still be detected amongst all Indo-European peoples,† amongst some only in faint traces, as in the case of the Indians and Romans; in the case of others, as the Greeks, Teutons, and Slavs, it appears in full force in their early history, while it survives to the present day amongst the Afghans, Albanians, and some Slav peoples. But wherever this institution is found, we also find the possibility of buying off the revenge of the injured sib by means of *wer-geld*, and thereby of averting the evil consequences of a feud which otherwise would be transmitted from generation to generation. Thus we have in Homer:—

> καὶ μέν τις τε κασιγνήτοιο φονῆος
> ποινὴν ἢ οὐ παιδὸς ἐδέξατο τεθνηῶτος
> καὶ ῥ' ὁ μὲν ἐν δήμῳ μένει αὐτοῦ πόλλ' ἀποτίσας,
> τοῦ δέ τ' ἐρητύεται κραδίη καὶ θυμὸς ἀγήνωρ
> ποινὴν δεξαμένου. (*Il.*, ix. 631.)

With regard to the Romans, the sentence of Tacitus (*Germ.*, 21) applies: "Suscipere tam inimicitias seu patris seu propinqui quam amicitias necesse est; nec implacabiles durant: luitur enim homicidium certo armentorum ac pecorum numero recipitque

* The objections which R. Loening (*Z. f. d. gesamte Strafrechtsw.*, vii. 655) makes to the equation πηός and *pâricîda*, which was first put forward by Fröhde (*B. B.*, viii. 164), and to which I add the Teut. *farg*, will not hold water. True, πηός means kinsman generally, and *affinis* in particular; but our inquiries have shown that if a primeval equation to denote the sib can be found amongst the Indo-Europeans, it can only be of agnatic character. Consequently, if one member of such an equation is used by some one language to designate a non-agnatic relative or *affinis*, this must be a secondary meaning; in other words, the G. πηός must once have been identical in meaning with Lat. *gentilis*.

Precisely the same applies to the Teutonic words, O.H.G. *mâg*, A.S. *mæg*. The A.S. *mægð*, who fight side by side, and are answerable for the behaviour of the *mæg* in the fight (Beowulf ed. Heyne, 4 Aufl. *v.* 2887), can only be taken as originally equivalent to the Roman *gens*, for which I again refer to Rosin's work (above, p. 399). And yet Goth. *mêgs* has taken on the meaning of "son-in-law," and O.N. *mâgr* that of "relative by marriage, son-in-law."

To this must be added that the comparison of *parricîda* with *perperam*, &c., put forward by Mommsen (*Röm. Staatsrecht*, ii. 1², p. 528), and approved by Lœning (*loc. cit.*, p. 661), is quite untenable as a piece of philology.

As to *pâricîda* : *parricîda*, compare Schweizer-Sidler, *Gr. d. lat. Spr.*², p. 56; F. Stolz, *Lat. Gr.*, p. 168. Fröhde's explanation of *pâricîda* is also followed by G. Meyer, *Gr. Gr.*², § 223.

† F. Miklosich, *Die Blutrache bei den Slaven*, *Denksch. d. Wiener Akad. phil.-hist. Kl.*, xxxvi. 127, *ff.*

satisfaction on universal demand. In the Avesta, too, murders are punished by fines (*sarəδa-caonhō*), or sometimes compensated for by the offer of young girls (*vīθiricinahē*); W. Geiger, *Ostiranische Kultur*, p. 153. And as Roth (*Z. d. D. M. G.*, xli. 672) has also discovered traces of the *wer-geld* in the Vedas, where it is designated by *vīra*,* *vīra-dēya*, *vīra-yātana*,* which corresponds to the Teutonic words A.S. *wer*, M.H.G. *were* (= O.H.G. *weragelt*), we shall perhaps not go far wrong if we regard the possibility of averting a blood-feud by means of a fine of cattle as dating from Indo-European times.

The verb which originally connoted the exaction of revenge, whether in blood or in the shape of a fine, was Sans. *ci*, Med. *cāyē*, Zend *ci*, G. *rīugan* (from which also *rouw* = Zend *kaēnā*; cf. Curtius, *Grundz.*[5], p. 489, and Laist, *Graeco-italische Rechtsgeschichte*, pp. 321, 741.

That there were in the sib certain kinsmen, the nearest relatives, on whom the duty of taking vengeance first fell, may be assumed *a priori*. In Homer the obligation is mentioned as lying on sons, grandsons, father, brothers, and *δμῶες*, the last an expression which admits of no certain interpretation. *Ἀδελφεοί* are never mentioned in this connection. Once (*Il.* xv. 554) an *ἀνεψιός* is mentioned: this is Mekuppos, the son of Hiketaon, relatively to Dolops, the son of Lampos. Now, Hiketaon and Lampos were brothers (*Il.* xx. 238), so that we have to do with brothers' sons. It is clear, therefore, that our most ancient authorities only recognise, or at any rate only mention, agnate relatives as under the obligation of the blood-feud.

The question, whether and how far a primitive kind of justice was administered within the sib is one on which I cannot enter. For offences against the community, such as theft,† &c., a common and most terrible punishment may have been expulsion from the community. In this relation we have a most remarkable equation in Sans. (Vedic) *parīvṛ́j* = A.S. *wrecca*, O. Sax. *wrekkio*, O.H.G. *recchi*, O.N. *vekkr*.

The means employed for discovering the guilty were, even in the primeval period, ordeals, especially by fire and water (A. Kaegi, *Alter und Herkunft des germanischen Gottesurteils, Festschrift zur Begrüssung der* xxxix. *Versammlung deutscher Philologen und Schulmänner in Zürich*, 1887).

The union of several clans (*vik-s*) produces a higher association which we may call the canton or also the tribe. That such combinations were formed even in the primeval period for common objects, and especially for military purposes, is extremely probable. Only, it does not seem as though a fixed uniform name had established itself at that time for these higher political units. In

* Dalbiñek differs in Leist's *Altar. Jus Gent.*, p. 297.

† Etymologically connected with *ἐτ-αιρος* and Lith. *síerczas* (**sreĵ-s*), "guest."

‡ Sans. *stā-tṛ*, *tāyú*, "thief." Zend *tauru*, G. *ταυρόω* (Lat. *mustēla*, "stealer of mice" = "weasel"), L. *taid*, O.S. *tuiz*, G. *κλέπτω*, Lat. *clepere*, Goth. *hlifan*.

the Avesta we find used to express this conception *zantu* and *dahyu* = O. Pers. *dahyush*; in Sanskrit the *jana* is followed by the *pitri*; in Greek the tribe is called φῦλον, φύλη, and also γένος; in Slavonic *plemę*; the Teutons were divided into *pagi* = Goth. *gavi*, O.H.G. *gouwi* and *civitates* = Goth. *þiuda*. The latter alone recurs in the same or a similar sense in several western Indo-European languages: Goth. *þiuda*, O.H.G. *diot* = O.L. *túath*, Osc. *touto*, Umbr. *tôta*, Lith. *tautà*, "district."

In Indo-European the expression *vik-* or *vik-es* must have served to also express the combination of several clans. When such combination took place, it became necessary to choose one of the clan-lords (*vik-pati*) to administer the common business, and above all to act as supreme commander. It is not impossible that the equation, Skr. *râjan* = Lat. *rex*, L. *ri*, designated some such office.

It is conceivable that the first beginnings of the συνοικισμοὶ of several clans round a common centre go back to primeval times. Amongst the southern Slavs, as Krauss (*loc. cit.*, p. 22) relates, every *župa* (the district inhabited by a *plemę*) was bound to erect a stronghold for its own defence, in a spot adapted by nature for the purpose. "The stronghold was the political centre, and in ancient times also the religious centre of the whole *župa*. Here the elders of the *župa* assembled for their common deliberations, this was their base in war, their place of retreat in time of attack." The same arrangement may have been known to the primitive period, and may be indicated by the equation, Sans. *pur* = G. πόλις.

It is in clans, individual or confederated, that we must, we believe, imagine the Indo-Europeans to have migrated and have been diffused. Even when the Indo-Europeans had effected the transition to agricultural life, and the transformation of the nomad clans into bodies of farmers and village-communities, even then the period of their migrations over Indo-European territory had not yet come to a close. We have in this work pointed out often enough that their migrations reach up to and over the threshold of history. It was obviously a common occurrence for a number of village-communities weary of the work of agriculture, or led by desire of better soil, to cut their crops, like the Helvetii of Cæsar, pull down their lightly-built huts, pack child and chattel on the wagon, with its team of oxen, and seek their fortune in a distant land. The sweet word "fatherland" had no attractive sound for primitive man, nor did it acquire it until a territorial basis was supplied to the political unit in place of the tie of kin.[1] In those wandering times people and army were one (O.H.G. *folc*, *cf.* O.S. *pulkŭ*, "troop," "army;" *cf.* also G. δῆμος, "people" = O.L. *dâm*, "a king's followers:" Windisch, *B. d. K. Sächs. G. d. W. phil. hist. Kl.*, p. 246, 1866), and the clan-lord or *rex* became the commander or *vojevoda*. It was in these times that the reins of regal or princely power were drawn tighter, and it is perhaps not

[1] *Cf.* Maine, *Lectures*, p. 72.

mere chance that the Slavonic tribes, whom we believe to have remained nearest to the original home (ch. xiv.), were the longest to remain in ignorance of regal power.*

I must unfortunately abstain from following the development of these factors further, and can only conclude this chapter by lightly touching on one question more, viz., whether the various clans or confederations of clans, which we must suppose to have existed in the primeval period, were united under one common appellation. There are not wanting scholars who maintain this view, and who hold that the common name of the Indo-Europeans was Aryans, which is inferred from the agreement of Sans. *árya*, Zend *airya* with the native name of Ireland, *Ériu*, *Érenn* (Zimmer, *B. B.*, iii. 137). But granted the comparison is correct—Windisch, *Kelt. Spr.*, p. 139, doubts it—I would not venture to draw such a conclusion from it. Turn where we may amongst the European members of the Indo-Germanic family, everywhere we find, be it in Greece or Italy, be it amongst the Slavs or the Teutons, scattered tribes with separate and individual names: it is only in quite late times that collective appellations appear, and they are generally bestowed from without. That Indians and Iranians alike call themselves *árya*, *ā́rya*, *airya*, is just a proof of their uncommonly close connection with each other, which is without parallel amongst Indo-European peoples. The word-stem in question—the original meaning of which is, by the way, quite obscure—may recur amongst other Indo-European peoples (cf. *Ario-vistus*, I. *aire*, *airech*, "nobilis" = Sans. *ā́ryaka*), but that it was a collective appellation for the Indo-Europeans generally, seems to me an unlikely thing, at any rate as soon as we come to regard the original people as split into a number of tribes or clans.

* *Cf.* Müllenhoff, *Deutsche Altertumskunde*, ii. 34, *f.* The name for king (O.S. *kŭnęgŭ*, *kŭnęzĭ*) was borrowed in primitive Slavonic times from the Teutonic (O.H.G. *chuning*, O.N. *konungr*). The Teutons, again, borrowed their Goth. *reiks*, O.H.G. *rihhi*, &c., from the Celtic (I. *ri*.). The loan of the Teut.-Goth. *andbahts*, &c., from the Gallic *ambactus*, falls under the same head as regards meaning and history.

G. ἄρχω = Goth. *raginôn* (Fröhde, *B. B.*, iii. 13) and I. *flaith*, "lordship." Goth. *valda* (O.S. *vladą*, a loan?) are primevally related.

G. βασιλεύς is not yet quite clear. A new interpretation is given by Bezzenberger (*Beitr.*, ii. 174); he takes *βασι-λο-ς (βασίλη, βασιλίς) as the foundation of βασιλεύς, and compares *βασι = Zend *jaiti*, "house," "family," Lith. *gimtis*, "natural kind," so that βασιλεύς would be like O.H.G. *chuning*, "clan-lord." Γάναξ and τύρσαννος are perhaps foreign (*B. B.*, xiv. 309).

CHAPTER XIII.

RELIGION.

Difficulty of the Task—I. A Short History of the Comparative Mythology of the Indo-European Peoples: Max Müller, A. Kuhn, W. Schwartz, W. Mannhardt, E. H. Meyer, O. Gruppe—II. Indo-European Etymological Equations touching the Belief in the Gods and Cults; Conclusions therefrom—III. Concluding Remarks: Priest and Physician—Sacrifice—Human Sacrifice—Mountain and Forest Cults—Question of Immortality Ancestor Worship.

In the infancy of a nation the ultimate questions as to its higher spiritual life may be comprehended in the single inquiry:—

Had the original people a religion?

Did the original Indo-Europeans wander over the face of the earth, dull and indifferent, obeying appetite alone, *pronî ac ventri obedientes*, burdened with the fear of phantoms, magic, and superstition in its thousand forms? Or had they raised their gaze to the heavens above, with their terrors and their wonders? And if so, in the sun that drives away the hostile night, in the lightning which descends in fire upon the earth but forerunns the refreshing rain, in the storm which bursts from heaven, uprooting high-crowned trees, in the vault of heaven itself which stands above the earth and never changes, did they but see mere natural forces, now kind, now terrible? Or did they imagine beings in and identical with the phenomenon itself, who sat to judge and punish right and wrong, the incarnation of a moral order and a law divine? Did they bow the knee in reverence and offer prayer and song? Were sacrifices offered to avert the wrath of heaven or gifts made to get return? Were there already people who had succeeded in persuading others that they were the chosen interpreters and guardians of heaven's will? And when earth covered the corpse, or when the flames of the funeral pyre had ceased to glow—both forms of burial were known to the Indo-Europeans from of old—was all over with man, or did the spirit soar from the body to join the spirits of sire and grandsires, and with them live a life of blessedness?

It is with some embarrassment that we undertake to give an answer to these questions which are so easily put and so hard to answer; for just now the history of the religion and mythology of

the Indo-Europeans in the most ancient times is the subject of views so different, and so fundamentally opposed to each other, that it seems impossible at present to take up a safe and well-founded position with regard to them. Nevertheless, it would be an intolerable omission if the subject of religion were left undiscussed in this work.

Our design is to put what we have to say on this matter in three sections: in the first we shall endeavour to sketch with the utmost brevity the outlines of a history of the Comparative Mythology of the Indo-European peoples, as we intimated on p. 15. Next, we shall subject those linguistic equations which bear on cults and the service of the gods to an examination as to their value for purposes of history. Thirdly, we shall append in a final section some scattered remarks upon ancient Indo-European belief, and especially on the doctrine of immortality.

I. A Short History of the Comparative Mythology of the Indo-European Peoples.

The founders of the Comparative Mythology of the Indo-European peoples must be considered to be Max Müller and Adalbert Kuhn, whose views, however much they may frequently diverge on details, have so much that is fundamental in common that they may here be treated together. They are based on three leading ideas, maintained by these two scholars: first, the conviction, due indeed to the brothers Grimm, that myths have their root not in any creation proceeding from a higher stratum of society, say the priestly or the minstrel class, but like language itself in the depths of the people's soul; second, the conviction that the most ancient form of the Indo-European belief in the gods was to be found in the hymns of the Rigveda, some of which are indubitably based upon the observation of natural phenomena, and which came to be better known just at the time when both scholars were in the prime of their working life; third, the observation that precisely these hymns of the Rigveda display so much resemblance to the myths of related peoples, as regards both content and language, that they must date from the time of the primeval Indo-European period. A. Kuhn has endeavoured to establish cycles of Indo-European myths of this kind in large numbers: suffice it to here refer to his works on Gandharvas and Centaurs (*K. Z.*, 1), Ἑρινύς, *Saraṇyū* (*ib.*), on Manus, Μάνης, Mannus (*K. Z.*, iv. 81, *ff.*), Ἔρρως, Saramâ, Sârameya, Wuotan (*Haupt's Z.*, vi. 117, *ff.*), *Die Herabkunft des Feuers und des Göttertrankes* (Berlin, 1859), and others. Especial boldness in interpreting mythical names as referring to natural phenomena is shown by Max Müller, whose studies in mythology and the history of religion may be found in his lectures on the Science of Language, Essays, Introduction to the Comparative Science of Religion, Origin and Growth of Religion (London, 1880), &c.

A summary of what Max Müller now believes to be possible in the matter of Comparative Mythology is given in his *Biographies*

of Words, pp. 188-98 (Religion and Myth). Here we come across such equations as Ἀπέλλων = Sans. *apío ṇuván*, "removing, opening," Ἀθήνη = Sans. *ahaná*, "morning, day," Ἀχιλλούς = Sans. **aharyu* from *ahar*, "day," Βρισηΐς, if for *Βαρσηΐς, the offspring of Brises, conquered by Greeks given to Achilles = Sans. *bṛsaya*, conquered by *Pan*, &c.

The source of myth, according to both investigators, is to be found in the nature of language itself. "It is," says A. Kuhn (*Die Entwicklungstufen der Mythenbildung, Abh. d. Berl. Ak. d. W.*, 1873), "a conclusion which is coming more and more to be generally admitted that the foundation of mythology is to be looked for in the domain of language, and that its most important factors are polyonymy and homonymy."

This multiplicity of expression, however, is due on the one hand to the tendency of language to choose out one only of the properties of any object in the formation of substantives, as for example, when night is termed dark, obscure, humid, &c., and on the other hand to poetical metaphor, as when beams of light are called reins, fingers, hands, or cows. Originally men said "daylight has disappeared, night is come," then with poetical metaphor, "the cows have disappeared, the dark spirit of night has stolen them away." Thus the original expression ceased by degrees to be understood. Tales were told of the cattle of Helios, or of the cattle-lifting of Cacus, &c., and the myth was created.

Max Müller's view is extremely similar; it is summed up in the sentence: "Mythology is but an old form of language." The way in which he conceives mythological phrases to have originated may be seen from what he says, *e.g.*, in *Growth of Religion*, on the auxiliary verbs. These verbs, such as "he is," "to be," "I was," originally had a fuller meaning, and were equivalent to "breathe" (Sans. *as*, *ás-u*, "breath"), "grow" (G. φύω), "dwell" (Sans. *vas*). When, therefore, the ancient Aryans wished to say anything about the sun, moon, earth, mountains, or rivers, they could not just say as we do, "the sun is there," or "it rains," they could only think and declare, "the sun breathes" (*sûryó asti*), "the rain rains." Above all it was impossible for the ancient Aryan to do anything but designate the objects he perceived as actively doing something. The sun is the lighter, the warmer, the nourisher; the moon is the measurer; the dawn is the awakener, &c. "Here in the lowest depths of language lie the true germs of what we afterwards call figurism, animism, anthropopathism" (p. 187). What Max Müller takes to be the further course of myth-making is exemplified, *e.g.*, in the myth of Apollo and Daphne: there was in the original language a **dah-anâ* = δάφνη, "she that burns" ("she that lightly burns"), a name at the same time for the dawn and the laurel. Of the dawn the tale was told that the sun pursued her. In course of time δάφνη in the sense of dawn was lost from the language, and then the story came to be that Apollo (the sun) had pursued a nymph named Daphne, who was thereupon changed into a laurel by the gods.

The key-note running through the whole mythology of the

Indo-European peoples is then, according to the views of Max Müller and Kuhn, that nature is viewed as endowed with life; and not least that a contest is waged, and an antithesis present amongst them, whether in the tragedy of the thunderstorm, in the shapes assumed by the clouds, or rather in the regularly recurring change from day to night. "The main foundation of the religions and myths of most Indo-European peoples," says A. Kuhn (*Über Entwicklungsstufen*, p. 126), "is the contest between the powers of light and darkness, which, as is well known, has been carried out by none of them further than by the ancient Bactrians. Their tradition, like that of all the other Indo-Europeans, is permeated by the final victory of light, whereby the powers of light become the conquerors, whereas those of darkness are temporarily or permanently imprisoned or subdued. That this final triumph of the light must have come to be the general conviction of all the Indo-Europeans at a time while they were yet one people, is shown by the witness of their name for the gods, which is a word derived from the root *div*, 'to lighten,' and consequently is a proof that they recognised and worshipped these powers of light as their lords and as leaders of their lives."

These fundamental views of the two scholars named have recently been the subject of attacks which have been made from different sides, and by specialists of equal authority, with the purpose either of modifying the views of Max Müller and Kuhn in important points, or of totally overthrowing them. The school of Müller and Kuhn started to reconstruct the Indo-Europeans' religion from the oldest literary monuments of the Indo-European peoples, from the Veda, the Zend-Avesta, the Edda. Modern popular beliefs were only utilised in a very secondary degree, and even then they were, in imitation of Grimm, regarded as faded reminiscences of the ancient heathen gods and heroes, who had been driven from the popular mind by Christianity. The popular story of the wild hunter and his furious crew was the last remnant of the high and holy worship of Woden in olden times. "The ancient god lost his confiding nature and his familiar features, and came to be regarded as a dark and awful figure to which there was still some power left. Dead alike to men and their service, he sweeps through the air on his wanderings a spectral and fiendish form" (J. Grimm, *Deutsche Mythologie*, ii.[3] 870). As early as 1849, W. Schwartz had expressed dissatisfaction with this view in a programme entitled "Der Volksglaube und das alte Heidentum," and had endeavoured to demonstrate that so far from popular beliefs of modern times merely containing the fragments of a higher mythology, they, on the contrary, had in many cases faithfully preserved the roots from which the higher deities that exercise their sway in the Edda and elsewhere had originated. This opinion, assisted by the steady growth all over Europe of the passion for collecting the tales, stories, customs, and usages that still live amongst the people, has gradually led to a new departure in Comparative Mythology of which the most prominent representatives in Germany are Wilhelm Mannhardt and Ehard Hugo Meyer.

Mannhardt's renunciation of the line followed by Muller and Kuhn is contained in the preface to the second volume of his *Wald- und Feldkulte*. "I cannot," he says on p. xvi, "help avowing that in my opinion Comparative Philology has not yet borne the fruits which in a too sanguine mood were expected from it. The only certain results, at any rate, that have been obtained are limited to a very few names of gods (such as Dyaus-Zeus-Tius, Parjanya-Perkunus, Bhaga-Bog, Varuna-Uranos, &c.), germs of myths, to which may be added numerous analogies, which however do not necessarily imply actual descent *from* a common origin. . . . I am afraid the history of the science will have to describe them (such parallels as Sarameya-Hermeias) rather as displays of ingenuity than as ascertained facts," &c. On the other hand, it became more and more clear to him that our handbooks of ancient mythology only contain what the refinement of town life had made out of the original beliefs of the people. "Now under this, the mythology of the learned, there may be discerned just a mythology of the people, which betrays the most startling similarities to the popular traditions of the peasant of northern Europe." These analogies extend to folk-tales, stories, and customs, not less than to mythical personifications, to the "moss-folk" and "wood-lady" (= Dryades), wild men (= Cyclopes, Centaurs, Pan, Satyrs), "water-lady" (= Thetis), &c. In fine, all the spirits which, both in antiquity and in modern times, haunt wood and plain and house belong to the set of original ideas from which many exalted deities or heroic figures, as can still be proved, derive their origin. "Thus," concludes the work referred to, "Schwartz' discovery that the popular beliefs of the peasantry contain the germs of the higher mythology, in a form that still can be immediately identified, is confirmed by important analogies."

This same idea that the original Indo-European people believed rather in spirits and demons than in gods, combined with the theory of ancestor worship, which has of late been brought into prominence particularly by anthropologists, and is maintained to have been the source of all beliefs in the gods, is to be found in Elard Hugo Meyer, editor of J. F. Grimm's *Deutscher Mythologie*, and since the death of Mannhardt perhaps the greatest authority on mythology in Germany.

In the opinion of this savant there are three stages in the history of mythology, which Meyer terms the belief in departed spirits, in spirits generally, and in gods (cf. *Indog. Mythen*, i. 210, *f.*). In the first period mythological thought begins with the idea that the soul continues to live for some time after death, sometimes residing in plants and animals, and can injure its enemies and assist its friends. These souls require food. The oldest form of sacrifice is the worship of the dead. This stage of belief, which universally precedes animism, has been gone through by every people on the face of the earth. In the case of some civilised peoples, such as the Chinese, the Egyptians, the Romans, ancestor worship has continued to form the kernel of their religion. This

period coincides with the stage in the history of culture in which life is supported by hunting.

During the second period the ghosts tend more and more to become spirits, first spirits of the wind, and then demons of the thunderstorm and of the rain. From their midst individual spirits with mythical names begin to detach themselves. Spirits of light still remain in the background. The stage of culture is that of pastoral life. The Indo-European peoples spent most of this period together, the Greco-Indo-Persian peoples living together longest. An example of this purely Indo-European belief, as it appears, is sought by E. H. Meyer in the linguistic and mythical identity of the Gandharvas with the Centaurs, whom he regards as demons of wind and weather.*

The third period, in which individualised demons and deities of light become gods, belongs to the time when the Indo-European peoples had separated, and had advanced to agricultural life and a regular form of government. "When, nevertheless, we are surprised by the similarity between two deities, belonging say to two different Indo-European peoples, this similarity is due to the identity of the material produced in the earlier periods and used in the manufacture of the higher figure, and also to analogous development, rather than to any common origin of the figure."

Thus the tendency of this departure in Comparative Mythology was to dethrone the primitive Indo-European gods of heaven and light, and to set troops of wind and weather spirits in their places. We have now finally to mention an attempt designed to deal the death-blow to the notion that the primeval period had any belief of any sort or description in the gods, and to demonstrate that the Indo-Europeans were totally without religion. It is what I conceive to be a most important work, viz., Otto Gruppe's *Die Griechischen Kulte und Mythen in ihrer Beziehung zu den Orientalischen Religionen*, of which as yet only the first volume (Leipzig, 1887) has appeared. It contains two chapters, of which one consists of a review of the most important attempts to explain the origin of cults and myths, while the other deals with the most important literary monuments from which the history of myths and cults is derived.†

The correctness of the three fundamental positions, on which, as we remarked above (p. 406), the hypotheses of Müller and Kuhn rested, and which the Demonists had not at any rate in principle renounced, is absolutely denied by O. Gruppe. Mythology is not the religious language of the people, it is the creation and the property of the higher classes of society, it is conscious composition, a division of artificial poetry. The Rigveda and here

* L. v. Schröder endeavours to find female beings of the same or a similar kind in the Apsaras, Aphrodite, Swan Maidens, &c. (*Griechische Götter und Heroen*, i. 1887); *cf.* above, p. 162.

† Cf. *Berl. Philologische Wochenschrift*, Nos. 29 and 30, 1888 (R. Fritzsche); *The Classical Review*, Feb. 1888 (E. B. Jevons); *Deutsche Literaturzeitung*, No. 14, 1888; *Lit. Centralblatt*, No. 14, 1889.

Gruppe is following the path struck out by A. Ludwig, and further pursued by A. Bergaigne—reveals to us anything but the sway of the naive poetry of nature. In its oldest parts it abounds in a "pruned" theology and in priestly refinements. For all that, it remains the most important source for us, one in which we are still able to find the origin of all religion and all mythological expressions, in certain proceedings which subsequently came to be called cults; the ritual is the source of all religion. The priest pours streams of oil on to the blazing fire to hasten the dawn of day. These streams are called the eager cows which hasten to mate with Agni. The latter, therefore, is placed in the bosom of his own mother in order himself to beget himself (p. 155). Even the Indo-Europeans before the dispersion, though they knew no gods, went through certain proceedings, the source of subsequent ceremonies, with which certain ideas were associated that were destined one day to become condensed into mythology or transmogrified into dogma (p. 121). Thus, he says, of libations (p. 277): "The cult was not merely associated with a revel; it actually was the revel; the gods were worshipped by the intoxication of the worshipper, the enjoyment of the intoxicating drink constituted the act of devotion."

And third and last: Every pretended Indo-European name for a god or gods, every pretended Indo-European name for any ceremony forming part of a cult, which Comparative Philology has as yet unearthed, is either phonetically unfounded or inconclusive in meaning. The Indo-Iranian peoples are allowed "a limited number" of "primitive ceremonies" for their primeval period (p. 125).

There still remains, and remains to be explained, the undeniable agreement which the religions show in their myths and cults, an agreement, however, which stretches far beyond the region covered by the Indo-European peoples. This shows that the resemblances are not to be explained on any theory of inheritance, but are rather due—and here we come to the real and final object aimed at by Gruppe—to tremendous borrowing, owing to which "forms of religion from Asia Minor and Egypt were imported in large quantities to Greece, to India, and to the centre and north of Europe."

The truth of this hypothesis is to be demonstrated in the volumes to follow, the present one is only designed to pave the way for this theory, on which see sections 20–25 (*Ueber die Möglichkeit die Vererbungstheorie durch die Annahme nachträglicher Uebertragung zu ersetzen*).

Here we close our brief account of the currents and counter-currents which at the present day permeate the history of the religion and mythology of the Indo-European peoples. As our investigations have in all cases to take language as their starting-point, we turn at once to the discussion of those Indo-European equations which refer to cults and the belief in gods, against which, as we saw, objections were raised first by Mannhardt, and then much more definitely by O. Gruppe.

II. Etymological Indo-European Equations Referring to Cults and the Belief in Gods.

Anyone who looks over the considerable mass of equations which have been accumulated referring to Comparative Mythology, and observes that a scholar of the rank and influence of Max Müller still to the present day supports the largest part of them (cf. above, p. 407), will agree with us that it is no mean service on the part of O. Gruppe to have been the first to point out quite clearly that the linguistic science of the Comparative Mythologists is no longer coincident with the linguistic science of Comparative Philologists. Indeed, if one takes up a firm position on the ground of the phonetic laws which up to now have been recognised as correct, one will have to go so far as to believe that with the exception of a certain number of agreements, which will be put together shortly, scarcely one of the mythological equations as yet put forward is without its difficulties, phonetic or otherwise.

The time-honoured equation of *Μάνης*, Sans. *Mánis*, Taut. *Mannus*, is wrecked on the fact that the Greek word, to say nothing of its termination, cannot be reconciled as regards its root-vowel with the Indo-European **manâ*, to which the Indian and Teutonic words go back. It is, therefore, no safer than the comparison of G. *Κέρβερος* = Sans. *çárvara, çabala*, by means of which the dog of the nether world is assigned to the primeval period. The Teutonic Wuotan has been interpreted by means of the Indian *vâtá* ("wind-god, wind;" but in the first place the Sans. *vâta* (**vêtâ*) is connected with the Eng. *wind*, Lat. *ventus*, which invalidates the comparison with Wuotan.

Instead of G. *Ἐρινύς* = Sans. *Saraṇyû* one would expect **Ἐρευνύς*, for G. *κένταυρος* = Sans. *gandharvá*, a **κενθαύρος*, for O.N. *Lópurr* (a god of warmth) = Sans. *vṛtrá*, which some compare with a G. **Ὀρθρος*, a **Volþurr*. The equation of Saas. *Parjánya*, Lith. *Perkúnas*, to which again O.S. *Perunŭ* seems to belong, O.N. *Fiörgyn* presumes at the least that the Indo-European tenuis had declined into a media in Sanskrit. An Indo-European fundamental form for G. *Οὐρανός* = Sans. *Váruṇa* even has not yet been found. The identity of *Ἀπόλλων, Ἀπείλων* with Sans. *saparyéṇya* (above, p. 130): Sans. *sapary* is questionable because of the *e* of Lat. *sepelio* (= *sapary*). The comparison of G. *Ἑρμείας* = Sans. *Sáramêyâ* separates the Greek word from expressions of related meaning such as *ἔρμαιον, ἑρμηνεύς*, &c. The explanation of the Lat. *Neptûnus* by means of the Vedic *apâm napât*, "offspring of the water," might indeed have something to say for itself were it not for the fact that it is just the insignificant portion of the Vedic phrase (*napât*) which has been retained in the Lat. *Neptûnus*. The Lat. *Mars* and his comrades *Mâmers, Mâvors* can only be connected with the Sans. *Marút* by a series of philological feats of legerdemain, &c. I refuse, of course, absolutely to have anything whatever to do with equations in which a deity's name is explained by the invention of some Indian or other word, such as G. *Νιόβη* = Sans. **nyagâ* (Max Müller), or *Ἡφαιστος* = Sans.

**gâbhêyishta* (L. v. Schröder, above, p. 162); for every one will admit that for historical inferences as to the primeval period such instances are quite useless.

Now, it is indeed possible to make one important point in favour of the above equations, and others of the same kind. It may be said that mythical names are from the beginning enveloped in marvellous and superstitious ideas of the most varied description, and that the possibility of popular etymology counteracting the operation of phonetic laws is in their case particularly strong. And that we admit.

Say that the agreement in mythical function between the Sans. *sarasvatî* and the G. Ἐρινύς is striking, which is certainly contested by Mannhardt: it would be quite possible that the form *Ἐρσνύς, *Ἐρσνυς, postulated, was attracted by the G. ἐράνω, and became Ἐρινύς when the Erinyes became the furious goddesses of revenge in Greece. But this is a path which craves very wary walking. That the comparison of G. κένταυρος = Sans. *gandharvá* is phonetically suspicious has been recognised both by E. H. Meyer and also by L. v. Schröder. Both endeavour to effect the remedy by means of a popular etymology, the former assumes (*Indog. Mythen*, i. 165) reference to κεντάω and ἀήρ (αὔηρ; *gandharvas* = "goaders of the air"), the latter (*Griechische Götter und Heroen*, i. 73) regards a popular connection with ταῦρος ("steer-hunters") as probable. Only, both scholars have omitted to note that if the Sans *gandharvá* is to correspond to the G. κένταυρος it must in accordance with known phonetic law have appeared as **jandharva*, which would necessitate a change in the meaning of the Indian word also. Now, though the assumption is one which would probably give no difficulty to mythologists (*cf.* Sans. *gandhá*, "vapour"), still it is plain into what a maze of hypothesis this path leads.

As against these considerations consider what an enormous load these hypotheses have to bear upon their feeble shoulders. In the last new book (Leist's *Altarisches Jus Gentium*) the equation *Manu-Μίνως* forms the text to a section (*cf.* § 39, *f.*), which is designed to demonstrate that certain moral laws of the Indian Manu (such as those of cleanliness, doing no injury, committing no murder, no theft, no lie) constituted a sort of ethical code even in the primeval period. *Manu-Μίνως* was an ancient interpreter of the divine law in the primitive Indo-European period. Truly, a fact of the utmost possible importance, and decisive of the whole question as to the view we are to take of the moral life of the primeval period, if the collapse of the linguistic equation —which yet should be "the kernel of the proof"—did not rob it of its most important support; and the equation *Manus-Μίνως* may be counted as one of the most treacherous of all that have been put forward in Comparative Mythology.

Another observation, again, thrusts itself on the notice of any one who examines equations of the kind exemplified above, quite apart from their suspicious or non-suspicious character phonetically:

it is clear that they are always confined to an extremely small number of languages, those quoted above (with the exception of *Parjánya*, &c.) to two languages. The majority (7 : 12) of them are placed to the credit of Greek and Sanskrit. This consideration constitutes another objection to the validity of such equations as proving anything about the religion of the primeval period, for it may very well be that the Greeks and Indians had a set of myths and religious beliefs in common, in which the other Indo-Europeans never had any share, as indeed E. H. Meyer actually assumes (above, p. 410); *cf.* also above, p. 130.

Absolutely nothing, of course, can be proved as to the primeval Indo-European period by mythical names confined to the Indo-Iranians, such as Sans. *yáma* = Zend *yima*, Sans. *vivasvant* = Zend *vîvaṅhvañt*, Sans. *mitrá* = Zend *mithra*, Sans. *ásura* = Zend *ahura*, Sans. *sôma* = Zend *haoma*, Sans. *apâm nápât* = Zend *apâm napâṭ*, Sans. *vṛtrahán* = Zend *verethragna*, Sans. *yâtú* = Zend *yâtu* ("hob-goblin"); *cf.* Spiegel, *Arische Periode*, and also O. Gruppe, *loc. cit.*, p. 86.

If we wish to form a trustworthy opinion as to the religion of the primeval period, we must, I believe, begin by laying aside such equations as those described above. Having done this we have the following which are phonetically safe, and which have this much in common with each other, that they, one and all, originally designate natural phenomena that have—some in several, some in only one, linguistic area—attained to the dignity of divine honours.

Sans. *dyâús*, "sky," "god of the sky," G. Ζεύς, Lat. *Jupiter*, Teut. *Tiu*, *Zio*.

Sans. *ushás*, Zend *ushaṅh*, G. ἠώς, Lat. *aurora*, Lith. *austra*, Teut. **austrô*, A.S. *Eostra* (a spring goddess).

Sans. *agní*, Lat. *ignis*, Lith. *ugnis*, O.S. *ognĭ* (G. πῦρ, O.H.G. *fiur*, Umbr. *pir*, Armen. *hur*).

Sans. *sûrya*, *svar*, Lat. *sôl*, O.N. *sôl*, Lith. *sáulē*, Cymr. and Corn. *heul*, G. ἥλιος (root *sŭ*, *sâv*, **sû-r*, **sv-ar*, **sâv-el*, **sâvl*; *cf.* J. Schmidt, *K. Z.*, xxvi. 9).

Sans. *más*, Zend *mâoṅh*, G. μήνη, Lat. *Mena*, Goth. *mêna*, Lith. *Mênŭ*; *cf.* above, p. 306.

Sans. *stár*, Zend *stare*, Armen. *astλ*, G. ἀστήρ, Lat. *stellâ*, Bret. *sterenn*, O.H.G. *sterro*.

Sans. *vâta*, Lat. *ventus*, G. ἀήτης, O.H.G. *wint*.

Sans. *tanyatú*, Lat. *tonare*, O.H.G. *donar* (also a thunder-god).

Sans. *nábhas*, G. νέφος, Lat. *nebula*, O.H.G. *ñebil* (O.N. *niflheim*, &c.), O.S. *nebo*, "sky," I. *nél*.

Sans. *nákti*, G. νύξ, Lat. *nox*, &c., above, p. 312.

This list, obviously, might be increased, but what is given may suffice to make it clear what sort of equations and agreements they are that are safe in the field we are now treading. May we then assume that these phenomena of nature, or some of them, enjoyed divine honours in the primeval period; or is Gruppe right in supporting the opinion (above, p. 142) that this was not the case, and that

in the primeval period even a *dyáús* meant nothing more than the vault of sky above the heads of the Indo-Europeans, *agni* nothing more than the fire kindled by their hands.

Before assuming any attitude with regard to this question, we have to answer the previous question, whether any equations whatever can be traced to the vocabulary of the primeval period, which give unequivocal expression to the divine and its worship.

Here, too, there are series of words which agree indeed, but whose agreement proves nothing as to their meaning, such as Lat. *crēdo* (I. *cretim*), Sans. *craddadhāmi*, G. χέω (Lat. *fundo*, Goth. *giuta*), Sans. *hu*,* G. θέμις, Sans. *dhāman*, and others which must be also excluded. So, too, the root *nem*, "sky" (Sans. *nāmas*, "honouring," Zend *nemanh*, I. *nem*, "sky," *nemed*, "shrine;" *cf.* also G. νέμος, Lat. *nemus*), may have acquired its ritual meaning at a late period (Sans. *nāmati*, "he bows"). There remains, however, a number of equations, small but sure, which an extravagant scepticism alone can maintain did not possess a religious significance that had been developed as early as the primeval period. They are as follows:—

1. Sans. *dēvás*, Lat. *deus*, Lith. *diẽwas*, O.I. *dia*, O.N. *tívar*, "god," root *div*, Indo-E. *dei-vo-s*. Touching this equation, even Gruppe (p. 121) admits that "the root *div*" (this, though, is not the thing in question, but the clear-cut substantive *deivo*) in the pro-ethnic period comprised some other ideas in addition to the three already mentioned (light, sky, lordship), which come somewhat nearer the later meaning of "god."†

2. Zend *speñta*, "holy" (Sans. *çvātrá*, "offering"), Lith. *szweñtas*, O.S. *svętŭ*, Goth. *hunsl*, A.S. *hûsel*, O.N. *húsl*, "offering."

3. Sans. *yaj*, "worship, dedicate, offer," Zend *yaz*, G. ἅζομαι, ἅγιος, ἅγος (certainly only Græco-Indo-Iranian).

4. Here I place, though with some misgivings,‡ the equation,

* This has a ritual sense also in the Armen. *jaunem*, "I dedicate," "offer," "sacrifice" (Hübschmann, *A. St.*, p. 40).

† G. θεός is to be separated from this series. K. Brugmann has recently (*Berichte d. Kgl. Sächs. Ges. d. W.*, p. 41, *f.*, 1889) endeavoured to connect it with Sans. *ghô-rá-s*, "commanding reverence," a common epithet of the gods.

The Teutonic word for god, Goth. *guþ*, O.N. *goðn*, O.H.G. *got*, can be compared either with Sans. *hu*, "offer," or with Sans. *hvá*, "call" (the being to whom the offering is made or who is invoked). The comparison of Goth. *anses*, O.N. *óss*, with Sans. *ásu*, Zend *aṅhu*, can scarcely be justified.

I am inclined to attach the less weight to the equation Sans. *bhaga*, "lord of gifts," Zend *bagha*, "god," Phryg. Ζεὺς Βαγαῖος, O.S. *bogŭ*, as proving anything about the primeval period, because on the one hand direct borrowing between the Slavs and the Scytho-Iranian tribes is possible, and on the other the separate languages may independently of each other have called the deity "the giver of all good things."

‡ The difficulty consists in this, that the law of the disappearance of the *g* in the phonetic combination *gm* in Latin has not yet been satisfactorily ascertained (*cf.* Brugmann, *Grundriss*, i, 373). This scholar compares *flâmen* (with Bugge) rather with Goth. *blôtan*, "to offer," or (with Mommsen) with *flagrare*. Schweizer-Sidler (*Lat. Gr.*), too, separates *flâmen* from *brahman*.

Lat. *flâmen* = Sans. *bráhman*, *brahmán*, only I do not consider it right to infer from it the existence of a word for priest in the primeval period with as much certainty as Wackernagel (*Der Ursprung des Brahmanismus*, Basel, '77) and many others after him have done. The Lat. *flâmen*, to judge by its formation (cf. *agmen*, *flûmen*, *lûmen*), seems rather to have originally been a neuter noun (otherwise we should have expected *flâmô*), and therefore corresponds primarily to Sans. *bráhman*, "worshipping." Then, through the meaning "body of worshippers," "congregation," *flâmen* came to get the sense of "priest" (cf. J. Schmidt, *Die Pluralb. d. Indog. Neutra*, p. 24).

The number of Indo-Iranian agreements belonging to this class is considerable, such as Sans. *námas*, Zend *nemañh*, "worshipping" (cf. above), Sans. *pra-vac*, Zend *fravac*, "publish" (the sacred doctrine), Sans. *sam-kar*, Zend *hañkar*, "prepare the offering," Sans. *hôtrá*, Zend *zaothra*, Sans. *hávana*, Zend *zavana*, Sans. *prábhṛti*, Zend *fraberęti*, Sans. *âprî*, Zend *âfri-vacañh*, "benediction," Sans. *stu*, *stutí*, *stôtar*, *stôma*, Zend *stu*, *stuti*, *staotar*, *staoma*, Sans. *práçasti*, Zend *frasasti*, "worship of the gods," Sans. *gâ*, *gâthá*, Zend *gâ*, *gâthá*, Sans. *mántra*, Zend *máthra*, Sans. *átharvan*, Zend *atharvan*, Sans. *hôtar*, Zend *zaotar*, &c. (cf. Spiegel, *Arische Periode*, 30).

Obviously these Indo-Iranian equations prove nothing as to the primeval period. In some, certainly dubious, cases, however, their fundamental ritual meaning may extend beyond the limits of the Indo-Iranians. If, for example, it is probable that Goth. *gu*þ is to be traced back to **ĝhu-to* and belongs either to Sans. *hû* (*hávana*, Zend *zavana*), "to call," or to Sans. *hu* (*hôtar*, Zend *zaotar*), "to offer," this would indicate that Teutonic, too, at a very early period, possessed a root *ĝheu*, *ĝhu*, with a meaning of religious import.

I am, therefore, convinced that in the primeval Indo-European period there did exist predicates expressing the divine. The question now is whether we are to consider that the shining sky, the sun, the fire, the dawn, the storm, the thunder were the subjects of these predicates as early as the primeval period. Now, I am of the affirmative opinion, and am moved thereto by the following considerations.

In the case of two Indo-European peoples, one European and one Asiatic, whose early condition has, we may venture to believe, been preserved for us with peculiar fidelity, two authors, who are unimpeachable and who came into personal contact with these peoples, have declared in a perfectly unambiguous manner that the worship of natural phenomena was the very foundation of these peoples' religion.

First come the Teutons, of whom Cæsar says (*B. G.*, vi. 21): "Germanimultum ab hac (Gallorum) consuetudine differunt. Nam neque Druides habent, qui rebus divinis præsint, neque sacrificiis student. Deorum numero eos solos ducunt, quos cernunt et

quorum aperte opibus juvantur, Solem et Vulcanum et Lunam, reliquos ne fama quidem acceperunt."*

Next come the Persians, touching whom the statement of Herodotus (i. 131) runs as follows:—*ἀγάλματα μὲν καὶ νηοὺς καὶ βωμοὺς οὐκ ἐν νόμῳ ποιεύμενοι ἱδρύεσθαι, ἀλλὰ καὶ τοῖσι ποιέουσι μωρίην ἐπιφέρουσι, ὡς μοὶ δοκέειν, ὅτι οὐκ ἀνθρωποφοέας ἐνόμισαν τοὺς θεοὺς κατάπερ οἱ Ἕλληνες εἶναι· οἱ δὲ νομίζουσι Διὶ μὲν ἐπὶ τὰ ὑψηλότατα τῶν ὀρέων ἀναβαίνοντες θυσίας ἕρδειν τὸν κύκλον πάντα τοῦ οὐρανοῦ Δία καλέοντες· θύουσι δὲ ἡλίῳ τε καὶ σελήνῃ καὶ γῇ καὶ πυρὶ καὶ ὕδατι καὶ ἀνέμοισι· τουτοισι μὲν δὴ μούνοισι θύουσι ἀρχῆθεν, ἐπιμεμαθήκασι δὲ καὶ τῇ Οὐρανίῃ θεῷ παρά τε Ἀσσυρίων μαθόντες καὶ Ἀραβίων.*

I believe these quotations need no commentary. I am of opinion that they contain what we are to regard as the kernel of the Indo-European, and also of the Indo-Iranian belief in the gods.

Next, however, it seems to me to be an unassailable fact that in all Indo-European religions certain supreme gods and national gods have been evolved out of natural phenomena. The most illumining example is, after all, the series: Sans. *Dyáus*, G. *Ζεύς*, Lat. *Jupiter*, Teut. *Tîu*, *Zio*, Indo-E. **Dyḗus*.

The nature-power shows itself most distinctly in the Vedic *Dyáus*, which nevertheless carries the epithets *pitá*, *jánitá*, *ásura*. If it is the case, as has recently been assumed (*cf.* v. Bradke, *Dyâus Asura, Ahura Mazdâ, und die Asura's*, Halle, 1885), that in pre-Vedic times *Dyáus* was the name of the supreme sky-god, and only faded away so as to become a mere designation for the visible sky in Vedic times, and in consequence of excessive development of the *déva's*, the personification of the sky cannot have gone very far in that prehistoric period, else it would be difficult to see why the meaning of "sky" should have got the upper hand again in later times. Probably, however, *dyáus* meant nothing more in the Indo-Iranian (as in the Indo-European) period than *τὸν κύκλον πάντα τοῦ οὐρανοῦ, ᾧ θυσίας ἕρδουσι*.

The same sense attaches to the equation, G. *οὐρανός* (*Ἀκμονίδης*) = Sans. *Váruṇa* (Sans. *áśman*, Zend *asman*, "sky"), if this is phonetically correct.†

* Sol, Vulcanus, Luna are obviously only examples given by Cæsar, by "reliqui" we are to understand, those deities "quos non cernunt et quorum aperte opibus non juvantur," gods, therefore, such as Mars, Minerva, Mercurius, &c. Cæsar's statement is indeed inconsistent to some extent with the words of Tacitus (*Germ.*, 9). But I regard it as quite inadmissible, to do as J. Grimm (*D. Myth.*, p. 92) and so many others have done, and impute error or superficial inquiry to Cæsar. It should be remembered that between Cæsar and Tacitus are one hundred and fifty years, the one hundred and fifty years which saw the most important turning-point in the history of the Teutons, their contact with Rome. Why may not the nature-deities of the original Teutons in this space of time have been more and more detached from their original natural basis, in the presence of the Roman worship of the gods? What the Teutons of the time of Tacitus conceived the Mars, Mercurius, Hercules of the *interpretatio Romana* to be, we are absolutely ignorant. Anything anthropomorphic is expressly denied by the historian (ch. ix.) in the most decided manner.

† Neither does A. Hillebrandt infer more from it (*Varuṇa und Mitra*, p. 151).

In the Homeric world the Olympian is beyond a doubt already both the national, political god and the moral ruler of the world like the Varuṇa of the Vedic hymns. Yet he, of whom it is expressly said that at the division of the world (*Il.*, xv, 192),

Ζεὺς ἔλαχ' οὐρανὸν εὐρὺν ἐν αἰθέρι καὶ νεφέλῃσι,

cannot conceal his origin as a nature-deity. Amongst ancient epic epithets those which refer to the actual, natural sky still predominate. Zeus is called the "cloud-compeller" (*νεφεληγερέτα*), "rejoicing in thunder" (*τερπικέραυνος*), "waker of the lightning" (*ἀστεροπηγερέτα*), "wrapped in dark cloud" (*κελαινεφής*), "thundering on high" (*ἐρίγδουπος, ἐμβρεμέτης*), "hurler of the lightning" (*ἀστεροπητής*), "brandishing the lightning's flask" (*ἀργικέραυνος*), and amongst them are forms of such primeval scamp as *εὐρύοπα Ζεύς*, "broad eyed sky"* = *κύκλος Διός*.

Gradually an increase took place in the number of epithets expressing the relation of the gods to the government of the world and of mankind. To the epithets which already appear in the *Iliad*, such as *μητιέτα*, *ξένιος* (only once), new ones are added in the *Odyssey*, *ἱκετήσιος*, *ἑρκεῖος*, and in later times this class developed tremendously (*ὅρκιος, ἀγοραῖος, βουλαῖος, πλούσιος, οὔριος, ἐπόψιος*, &c.).

In the Teutonic world also **Tiwaz* (O.H.G. *Ziu*, O.N. *Týr*), although even here he was early specialised into a war-god, the *Mars* of the *interpretatio Romana* (*cf.* the *Mars Thingsus* represented as a warrior on the recently discovered English monument) can be clearly recognised as a sky-god, and in particular as a sun-god (the *Sol* of Cæsar) of the primeval period (*cf.* Hoffory, *Der germanische Himmelsgott, Nachrichten d. Ges. d. Wiss. zu Göttingen*, p. 426, *f.*, 1888).

Now, seeing that in several ancient Indo-European religions one and the same natural phenomenon has developed into a great, into the supreme, god, can we believe that the beginnings, at least, of the worship of this god do not go back to the time of the common origin of the related peoples?

I am, therefore, of opinion, and in this section I am only concerned to demonstrate its correctness, that even if we put aside everything unsafe and false that Comparative Mythology and the History of Religion have accumulated on this subject, we are, solely from the consideration of perfectly trustworthy material, more and more driven on all sides to assume that the common basis of the ancient Indo-European religions was a worship of the powers of nature practised in the primeval Indo-European period.

And, perhaps, yet other tendencies, from which in later times systems of religion were developed in artistic and brilliant forms,

* Thus, according to J. Schmidt (*Die Pluralbildungen der Indog. Neutra*, p. 400): "Εὐρύοπα (neuter) is shown by the formulæ in which alone it survives, especially in connection with the primeval accusative *Ζῆν*, as an antiquity of the first rank, which is not to be measured by the standard of later epochs."

are to be assigned to the primeval period. [illegible] the imagination must be allowed greater play than it [illegible] far in these pages.

The distinction of grammatical gender had been [illegible] primeval period. Consequently, inasmuch as the incipient [illegible] of personification naturally was guided by the gender [illegible] appellation, there were at that time both male and female deities. Dyâus and Agni were male beings to the Indo-European, Uṣas (as early as the Veda, the daughter of Dyâus) was feminine. The sun and moon were oppositely sexed, sometimes one, and sometimes the other playing the part of husband.*

But this brings the comparison of natural processes with human much more closely home to the imagination of man. And on the model of the earthly family, where the influence of the individual disappears completely before the will of the lord and father, the attempt is made by degrees to assign to the powers of nature also their proper relative rank. The foundation of this is fixed in nature itself. The hues and the glory of the young dawn are killed by the rays of the mounting sun, the sun himself is hidden from view by gloomy clouds, the night of the thunderstorm speedily roars itself out, the sky alone day and night looks down changeless as ever upon the earth beneath. And as all the natural phenomena, which the eye of the Indo-European noted, took their origin from the sky, the conception was suggested that the sky was the father and sire:—

Sans. *Dyâus pitâ*, G. Ζεὺς πατήρ (Διισπάτηρος, θεὸς παρὰ Τυρσηνοῖς in Epirus, Hesych.), Lat. *Ju-piter*.

In fact the combination of the word "father" with the word "sky," which here appears, is so symmetrical and so close, that it seems to me at least improbable to assume that it was first effected by the separate peoples.

The children of "father-sky," the progeny of the sky and denizens of heaven, may have been designated by:—

Sans. *dêvá*, Lat. *deus*, Lith. *dîẽwas*, O.N. *tivar*, "gods" (: *div*, "shine," as much as *Dyâus*).

Perhaps a mother was not thought of in the primeval period, as in the human family she was not of much importance; and "mother-earth" may not have been added as a complement to "father-sky"

* "In the difference of the genders ascribed by the Teutons and the Romans to the heavenly bodies, the difference in their conceptions of nature finds its clearest expression. To our forefathers the sun was a mild and gracious woman; the silent moon brought to their minds the tingling frost of cloudless winter nights. On the Mediterranean the moon was thought of as feminine, the tender moon-goddess assisted all creatures in the hardest times of need. The endless enchantment of southern moonlit nights as bright as day makes it possible still to feel and understand the mythological conception. Helios, on the other hand, is the hard and rigorous lord whose darts deal death and destruction. Before them fall the children of the mead, the children of men" (Nissen, *Über altitalisches Klima*," Verhandl. der 34 Vers. deutscher Philologen," p. 30, 1880).

[illegible] (Sed. *prithivī mātā*, *Nerthus terra mater*, &c., *cf.* [illegible] *Mythologie*, i.[3] p. 229, *f.*).

III. Remarks in Conclusion.

When we credit the original people with a stock of religious [illegible], it follows that we may assume that certain rites and ceremonies of a religious kind were practised in the primeval period. I must, however, confess that I think their discovery is almost entirely reserved for the inquirers of the future.

If there were priests at that time—and we certainly could not obtain satisfactory linguistic support for the assumption*—it will be well to conceive them rather as magicians, warlocks, and soothsayers, than as preachers and guardians of divine precepts. One department of these priests' functions certainly was the treatment and healing of diseases (*cf.* Lat. *medeor*, *medicus* = Zend *vimadanh*), which are universally regarded as due to the influence of evil spirits. Physician, magician, and priest may have been identical in the most ancient epochs of culture. In the Avesta we have by the side of *urvarô-baêshaza*, "healing by plants," and *karetô-baêshaza*, "healing by the knife," a *mâthro-baêshaza*, "healing by spells," expressly distinguished; and even in Homer (*Od.*, xi. 457) the blood streaming from the wound of Odysseus is stanched by incantation (ἐπαοιδῇ δ' αἷμα κελαινὸν ἔσχεθον). The same way of treating wounds is known to Pindar (*Pyth.*, iii. 51).

These facts in the history of culture are faithfully mirrored in the change of meaning which has taken place in the O.S. *bajati*, *baja*, "*fabulari*, *incantare*, *mederi*," Bulg. *baja*, "to pronounce spells," and O.S. *balija*, "magician," *balĭstvo*, "remedy," Russ. *bacharĭ*, "physician," which are connected with φημί, *fari* (*cf.* Miklosich, *Et. W.*, p. 5). In Slav. *vračĭ*, too, the meanings of "physician" and "magician" run into each other (*loc. cit.*, p. 395). In Greek I have endeavoured (*K. Z.*, xxx. 465) to explain ἀκέομαι, ἀκεστός by comparing Sans. *sam çansati*, *çastá*, "solemnly recite."

The nature of such healing spells may be inferred from the remains to be found in Teutonic and Indian antiquity (*cf.* p. 29).

* For Sans. *brâhmâu* = Lat. *flamen*, see above, p. 416. Much dust has been raised by Kuhn's comparison of the Lat. *pontifex* with Sans. *pathikṛt*, which has led to the Indo-European priests being regarded as either the preparers of the path of offering, or as the constructors of actual footpaths (Leist, *Gräco-it. Rechtsg.*, p. 182). *Cf.* Gruppe's well-founded objections (*loc. cit.*, p. 130). In any case, the totally different way in which the second element in the word is formed makes the equation valueless for historical purposes. Sans. *adhvaryú* are also interpreted as preparers of the way (Sans. *ádhvan*). Bury (*B. B.*, vii. 339) compares the word, on the contrary, to Sans. *madhu*, "honey" (referring to the libation).

Two Indo-Iranian terms for priests have been given above on p. 416. G. ἱερός, whence ἱερεύς, still simply means in the Sans. *ishirá*, "mighty, lively" (*cf.* ἱεροὶ ἰχθύες, Homer). A religious sense was subsequently developed in ἱερός as in Sans. *brâhman*, *brahmán* : *barh*, "strengthen" (*B. R.*). The starting-point is the "uplifted" feeling of the pious.

Lat. *sacer*, *sancio*, *sacerdos* are unfortunately obscure. Teutonic terms for priests in J. Grimm, *D. Myth.*, i. cap. v., and above p. 277.

An early acquaintance with healing herbs and simples, especially those made from poisonous plants, may have contributed to the effectiveness of those mysterious spells. *Cf.* Zend *vishcithra*, "a simple derived from poisonous plants," G. φάρμακον, Goth. *tubfaleisei*, "art of poisoning, magic," O.N. *lyf*, "medicine, remedy." The G. ἰάομαι, too (= ἰός = Sans. *vishá*), perhaps originally meant to provide with healing drinks, and so to heal.

Special names for the physician naturally do not appear until late; though the Indo-Iranian period seems to have rejoiced in one: Sans. *bhisháj*, *bhêshajá*, Zend *baishazya*, N.P. *bizišk* (Armen. *bžišk*). The following series is due to borrowing from west to east in ancient times: I. *liaig*, "physician," Goth. *lêkeis*, O.S. *lêkŭ*, "medicine."

Here, too, the notion of magician and sorcerer still appears in M.H.G. *lâchenære*, *lâchenen*. On p. 150 above, we have seen that the smith was equipped amongst other wonder-working arts with that of medicine. In Homer the physician, the ἰητὴρ κακῶν, is highly honoured (πολλῶν ἀντάξιος ἄλλων), and along with the μάντις, "soothsayer," and τέκτων is reckoned amongst the δημιουργοί, "people who exercise crafts useful to the whole people" (*Od.*, xvii. 384). In the same way the *tákshan* (τέκτων), *bhishá*), and *brahmán* are mentioned together in the Rigveda (ix. 112, 1).*

If, as is little likely to be doubted, offerings were made to heaven in the primeval period to purchase its favour, appease its wrath, inquire its will, or by way of returning thanks,† then

* In connection with the most ancient phase of the art of healing, it is important to note that the Indo-Europeans possessed a tolerably thorough knowledge of their own bodies, and in this they may have been assisted by the practice of sacrificing animals (above, p. 29). Possibly it is not accidental that several coincident names for scab and pustules are found in the Indo-Germanic languages (*cf.* Sans. *dadrú*, Lat. *derbi* in *derbiosus*, "scabby," Lith. *dedervinė*, O.H.G. *zitaroh*, Fick, i.[3] p. 106; Sans. *pâmán*, Zend *pâman*, Lith. *saŭsis*, O.H.G. *siurra*, Fick, ii.[3] p. 485), for this disease must have been particularly common owing to the dirt and uncleanliness, which we are to imagine attended life in the primeval period. *Takmán* in the Veda is a fever, τηκεδών in Greek, consumption. *Cf.*, further, Sans. *kâs*, Lith. *kósiu*, O.S. *kašili*, O.H.G. *huosto*, "cough," Sans. *vam*, G. ἐμέω, Lat. *vomo*, O.N. *voma*, "sea-sickness," Lith. *wémti*, "vomit."

A fresh (above, p. 17) collection and comparison of the Indo-European names for diseases would be valuable, not only for the history of medicine, but also for the general history of culture.

† J. Wackernagel's view that Indo-European offerings must have been solely petitionary (*Ueber den Ursprung des Brahmanismus*, 1877) seems to me incorrect. It is based on an overestimate of the importance of ideas peculiar to India. Though even in India an obvious thank-offering is preserved in the *âgrayaṇam*, the harvest thanksgiving (*cf.* W. Lindner, *Festgruss a. O. v. Böthlingk*, p. 79, *f.*).

Again, Wackernagel's assertion that Homer is acquainted neither with thank-offerings nor expiatory sacrifices requires considerable qualification. When it is said of Ægisthus, after he has fully executed his crime (*Od.*, iii. 274):—

πολλὰ δὲ μηρί' ἔκηε θεῶν ἐνὶ ἱεροῖς βωμοῖς,
πολλὰ δ' ἀγάλματ' ἀνῆψεν, ὑφάσματα τε χρυσόν τε
ἐκτελέσας μέγα ἔργον, ὃ οὔποτε ἔλπετο θυμῷ,

can anything but either a thank-offering or an expiatory offering be meant?

human sacrifice must have taken a prominent place amongst them.

Amongst the northern peoples there is evidence for its existence until late in the Christian era (*cf.* J. Grimm, *Deutsche Mythologie*, p. 38); the Greek world of myth is full of this usage, and even in real life, as in the case of the offering to the Lycæan Zeus, it survived far into historic times. In Rome, too, men were offered in ancient times (E. v. Lasaulx, *Die Sühnopfer der Griechen und Römer*, Würzburg, 1841; Leist, *Gräco-italische Rechtsgeschichte*, p. 257). Of human sacrifices in India an exhaustive account is given by Weber, *Indische Streifen*, pp. 54–89. In the east and in the west the idea that nothing but the offering of a human life can give a new building any prospect of permanence has shown itself very tenacious of life. "But a few years ago," R. Garbe writes to me, "when the great railway bridge over the Ganges was begun, every mother in Benares trembled for her children."

The gradual growth of the custom of selecting a criminal or a maimed person for sacrifice must be regarded as a modification of the original custom.

As for place, we may imagine those places to have been devoted to the worship of the gods where the power of nature acted most visibly and most immediately on the feelings of man, mountain tops, as in the case of the Persians (above, p. 417), and of the ancient Greeks, or groves and forests. We have already spoken on the subject of the worship of trees amongst the European branch of the Indo-Germanic family, of groves as the oldest temples of the gods, of the seat of the highest god, the oak, the primeval European tree (p. 277). Amongst the Indo-Iranians, too, the idea recurs that the divine numen had its abode in the leaves and twigs of sacred trees (*cf.* J. Wackernagel, *loc. cit.*, p. 10); but in the oldest records it is confined to the individual tree: the idea of a whole grove devoted to the gods is, as far as I know, originally foreign to the Indo-Iranians.

Finally, we may here briefly consider a question which appropriately comes at the end of our attempts to ascertain under what conditions the Indo-Europeans moved on earth—the question, that is, whether anything can be discovered as to the ideas of the original people about death, and the state of man after death.

The state of things amongst the most important Indo-European peoples as regards this subject is briefly as follows:—

1. Amongst the Indians, even in the Veda, a common abode for the departed, a place of beauty, is known under the sway of Yama. The way to this world of the dead is guarded by two dogs, called *sārameyau, i.e.*, "belonging to Sarámá, the messenger of Indra." In later times they were designated *çyámá* and *çabala*. In this world of the dead the *pitáras*, "the forefathers," spend a blessed life, though they are connected with their relatives who are left behind on earth, both the nearer (*sapiṇḍa*) and the more remote (*samánódaka*), by a strictly regulated ancestor worship, which comprises two kinds of religious ceremonies, the *Piṇḍapi-*

śrâjña, "cake-offerings to the manes" (*piṇḍa*, whence *sapiṇḍa*), and the *śrâddhas*, "festivals in memory of the departed," which are associated with free gifts to the Brahmans. These offerings are absolutely essential to the welfare of man in the next world. Marriage, kinship, and testamentary law, therefore, are most intimately bound up with this form of ancestor worship. Sons are desired in order that they may make these offerings to the dead. "To be a man's heir" and "to offer the dead man's meal" to him are convertible expressions. *Cf.* for all further information, W. Caland, *Ueber Totenverehrung bei einigen der indog. Völker*, Amsterdam, 1888. The only objection to the primeval character of the whole of this set of ideas is the single fact that the doctrine of immortality is absent from the oldest portions of the Rigveda, which, again, never mention either Yama or his dogs (*cf.* O. Gruppe, *loc. cit.*, pp. 114, 241).

2. With the *pitáras* of the Indians, Caland compares, as indeed many had compared before him (Justi, Geiger, &c.), the *Fravashis* of the Iranians (*ib.*, p. 48), a word which only occurs in the younger Avesta. They, too, were at bottom the shadows of the departed, glorified and wrapped in the radiance of divinities. E. Wilhelm ("The Aryan Period and its Conditions, and the Cult of the Genii in Ancient Eran," two essays, Bombay, 1888) only partially accepts this view of these extremely many-sided beings; in his account of the Fravashis he starts rather from the *genii* than from the *manes* of the Romans as Caland does.

3. In Greece the pessimistic view of the condition of the dead after death, which prevailed in the Homeric world, is sufficiently well known. Hades, whither the soul wins after, and only after, burial, and which even in the *Iliad* is not without the figure, nameless as yet, of the dog, is a place of terror and of awe. The ancient Nekuia vividly depicts the shadowy, incorporeal life of unconsciousness which the *ἀμενηνὰ κάρηνα* of the departed lead there. It is better to be a day-labourer on earth than king of the dead. The verses of the poem (*Od.*, xi. 566–631), in which the shadows continue in Hades the occupations of their lifetime, and in which a sort of hell for sinners is described, are rejected by Wilamowitz (*Hom. Unters.*, p. 204, *ff.*), probably correctly, as later interpolations (posterior to 600); *cf.* also Kirchhoff, *Odyssee*, p. 231. Hermes first appears as *νεκροπομπός* in the younger Nekuia, and here for the first time comes in contact with the Egyptian Thoth, "the advocate of the soul before the throne of Osiris."

Once in the *Odyssey* (iv. 561, *ff.*) mention is made of the Elysium, in which the fair-haired Rhadamanthus reigns, where life flows by pleasantly, and where there is no winter and no rain. To this the Hesiodic conception of the Islands of the Blessed in *Oceanus* attaches itself, where the heroes under the lordship of Kronos, who in the *Iliad* still abides in Tartarus, enjoy a life without care. Who can doubt that here we have, gradually appearing, a new belief, which is only to be understood in view of oriental tales and teaching (*cf.* Müllenhoff, *D. A.*, i. 65)?

From all this we see that ancestor worship* and the cult of the dead have no place in the Homeric world, and can have none. We can, however, observe how in post-Homeric times (*cf.* Nägelsbach, *Nachhomerische Theologie*, p. 407), even in the Tragedians, the notion of the divinity of the souls of departed heroes becomes gradually more defined. By this time a general cultus of the dead (*τὰ νομιζόμενα, χέεσθαι καὶ ἐναγίζειν*) spreads more and more, and has indeed many points in common with Indian and Roman ritual. That the *θεοὶ πατρῷοι* were these ancestors, worshipped as divinities, as Caland conjectures, is beyond proof.

4. The state of things at Rome may be dismissed more briefly. The belief in and worship of the *dei parentes*, the *divi Manes*, the *Lares*, &c., are so engrained in the life of the Roman that, as regards Rome, we have no reason to doubt that these ideas are primitive.

5. As for the Teutons, the question as to their belief in a life after death, and the worship of the spirits of the departed among them, deserves fresh critical investigation. The main point to be determined is the extent of the influence exercised on the Teutonic world in this matter by Græco-Roman or Christian views. Then, and not till then, it might perhaps be possible to decide whether such conceptions as that of the Norse Valhalla, of elfs and dwarfs, —in which Kuhn indeed (*K. Z.*, iv. 100) would see spirits of tribal-heroes—of the Wild Hunter, All Souls' Feast, Hel, the goddess of the dead, &c.—can be considered as belonging to the primeval Teutonic period.

Proceeding to examine the historical conclusions which we are, or are not, justified in drawing from the facts that we have thus set forth so briefly, the first thing we have to insist upon once more is, that all linguistic evidence which has been brought forward in support of an original Indo-European belief in immortality, equations, that is, such as *κέρβερος* = Sans. *çabala*,† *Μίνως* = Sans. *Mánu*, *Ἑρμῆς* = *Sáramêyá*, *Τάρταρος* = Sans. *talátala* is either so demonstrably false, or at least so unsafe, that it cannot be expected to throw any light on the question here under discussion.

The cardinal point seems to me to be whether the belief in the continued existence of departed ancestors, and the duty of continuing to honour them by means of offerings to the dead, which we have encountered in several quarters of Indo-European territory, are so firmly rooted there from the beginning of all tradition, that we are compelled, on the ground of the resemblances to be found

* The offering to the dead which is made by Odysseus, and which is a quite isolated case, cannot be regarded as such.

† As for the agreement between the Greeks and the Indians in the possession of a dog in the nether world, it may be remarked that the whole conception of a trial of the dead, with Osiris as judge of the dead, a hippopotamus-like guardian of the nether world, Anubis, the conductor of the dead, also recurs in ancient Egypt (Dümichen, *Geschichte d. alten Aegyptens*). *Cf.* as to Cerberus, J. van den Gheyn, *Cerbère*, Bruxelles, 1888. The figure of Charon, the ferryman of the dead, is not vouched for in Greece until quite late (Wilamowitz, *Hom. Untersuch.*, p. 225).

in the modes of conceiving and practising ancestor worship, to regard them as primeval, *i.e.*, as Indo-European.

I am of opinion that this is not the case, at any rate not, so long as no satisfactory explanation of Greek ancestor worship, quite apart from that of the Indians, is forthcoming. At present I am at a loss to understand how it is to be made probable that the idea of the continued existence of the departed and the necessity of worshipping them existed from primeval times, and was not gradually introduced amongst the Greeks. This may afford the measure of the scepticism which the author feels towards the books of Leist that have already been mentioned, and in which the assumption that ancestor worship existed amongst the Indo-Europeans, is one of the main pillars on which that scholar rests his views as to the history of the family and of morality amongst the Indo-Europeans. Even Caland in his careful investigation, mentioned above, only goes so far as to infer that "the Indo-Iranians ascribed divine power and glory to those who had departed in the past," whereas he displays reserve in his treatment of the question "whether the original Indo-Europeans conceived of the departed as deified beings."

CHAPTER XIV.

THE HOME.

Autochthony and Myths of Migration—The Oldest Abodes of the European Members of the Indo-Germanic Peoples: Slavs, Teutons, Celts, the Balkan and Apennine Peninsulas—The Scene of the Joint European Culture bounded by the Danube, the Carpathians, Dnieper, and Pripet—Original Home of the Indo-Iranians in East Iran—Prehistoric Point of Union between the East and West Indo-Europeans in the Steppes of South Russia, about half-way up the Volga, the Oldest Name of which (*Rā*) is probably of Indo-European Origin—The Condition of the most Ancient Indo-Europeans, and the Nature of the Steppes of Southern Europe—The Question of the Scythæ—Conclusion.

THAT the European members of the Indo-Germanic race, whom we shall make our starting-point in the following discussion, regarded themselves as autochthonous inhabitants of the lands they dwelt in, is a well-known fact. According to ancient sagas as to the origin of man, the Greeks were created by Deucalion from the bones of "the great mother" (from stones); according to the Hesiodic account the third race of men was produced from ash-trees (ἐκ μελιῶν)—both primeval ideas, as is shown indeed by the Homeric verse (*Od.*, xix. 163): οὐ γὰρ ἀπὸ δρυός ἐσσι παλαιφάτου, οὐδ' ἀπὸ πέτρης, "thou art not sprung from the oak renowned in story or from a rock."

The original inhabitants of Greece, Pelasgians, Leleges, Kaukones, &c., were all regarded as γηγενεῖς, "sprung from the earth," or προσέληνοι, "antecedent to the moon," and certain tribes like the Athenians particularly prided themselves on having occupied their territory from all time (Herod., vii. 161).

Similar views were held in the north. According to the Scandinavian myth the name of the first man was *Askr*, "ash," and the Germans of Tacitus derived their origin from the god sprung from the earth (*deus terra editus; Germ.*, c. 2), Tuisco. And the historian adds, it was improbable that Germany, *informis terris, aspera coelo, tristis cultu aspectuque*, would ever appear a desirable goal for any nation to migrate to.

By the side of these obviously original beliefs in autochthony we meet amongst several Indo-Germanic peoples a series of myths of migration, in which some have been fain to see reminiscences of wanderings from a distant home. We mean the Æneas story of

the Romans, the northern narrative of the Ynglinga-saga about Odin's journey from Asgard to Tyrkland through Gardariki (Russia) to Saxland (Germany), the Troy saga of the Franks, and many others.

Only, all these stories on closer investigation are seen to be so padded with learned accessories, and in part so directly contradict other saga traditions—it is only necessary to call to mind, for instance, the contradiction to the journey of Odin, above mentioned, contained in the account in Jordanis (c. 4) about the coming of the Goths from Scandza (Scandinavia)—that it seems impossible to extract any satisfactory kernel of historic truth out of this complication of learned and fantastic ideas.

We shall, therefore, attach but little weight in the following discussion to such direct traditions amongst the separate Indo-Europeans as to the origin of their respective nationalities. Our object is to determine the geographical scene of the stage in the history of culture which we have described in the previous pages, *i.e.*, the original home of the Indo-Europeans. We begin our analysis of this subject with an attempt to form some idea of the ethnology of our quarter of the globe in the most ancient times, and we start with the north of Europe, with that race which at the present day occupies the east of our portion of the globe, the Slavs.*

It is generally known that those peoples appear for the first time in history in the first century of our era under the name of *Venêdi* (Tacitus, *Germ.*, 46) or *Venedi* (Plinv. *Hist. Nat.*, iv. 96), and their abode at this period can be made out with tolerable certainty. On the one hand, they cannot yet have touched the north coast of the Black Sea, for this district was occupied by the Persian Sarmatæ or Sauromatæ; on the other hand, they cannot on the west have crossed either the Carpathians or the Vistula; for, as far as the river mentioned, Tacitus is acquainted with Teutonic tribes, which partially, as in the case of the Bastarnæ, extended over it as far as the modern Galicia and farther; and in the ancient Getic or Dacian and Pannonian proper names, large numbers of which have come down to us, no one as yet has succeeded in discovering any trace of Slavonic. If then, in the beginning of our era, the abode of the Slavs must be sought north of the Black Sea steppes, and east of the Vistula and the Carpathians, it is also probable that the same people was settled in the district mentioned as much as five centuries earlier. Herodotus, who is the first to give us any information as to the east of Europe, mentions to the north of the (probably Persian) Scyths, who covered the lower course of the four great streams, the Dniester, the Bug, the Dnieper, and the Don, several tribes, which he expressly designates as non-Scythian. One of these was the Νευροί, who are placed by the historian near the source of the Dniester. According to Slavonic phonetic laws, however, the Νευροί of Herodotus, as Schafarik has

* For the following I have been able to employ an unpublished paper by A. Leskien on the "Original Home of the Slavs," which the author with great kindness has placed at my disposal.

recognised, correspond fairly well with the name of the town Nur (*cf.* O.S. *nurijo* "*territorium*"), which is situated on the bank of the stream *Nurzer*, a tributary of the Bug (the confluent of the Vistula). If, however, the Νευροί were Slavs, the same may be assumed of the Βουδῖνοι, who are described by Herodotus (iv. 108) as a fair and blue-eyed ἔθνος ἐὸν μέγα καὶ πολλὸν γλαυκόν τε πᾶν ἰσχυρῶς ἐστὶ καὶ πυρρόν, and whose home is placed in the neighbourhood of the Neuri, in a wooded country abounding in otters and beavers, as does the modern Pripet, the tributary of the Dnieper (the Borysthenes; *cf.* Kiepert, *Lehrbuch der alten Geographie*, p. 342).

The oldest and the real home of the Slavs, therefore, proves to be, as K. Müllenhoff points out in more detail in *D. A.*, ii. 89, the district of the Middle and Upper Dnieper, west as far as the Carpathians and the upper course of the Vistula, eastwards in the direction of the Finns as far as the uppermost basin of the Volga and the Don.

North of the Slavs, and intimately connected with them, the Prusso-Lettish branch of languages was situated; these tribes are first mentioned as the Æstii of Tacitus (c. 45) on the amber coast, then as the Galindæ and Sudini of Ptolemy, the neighbours of the Venedæ. Müllenhoff (*ib.*, p. 22) makes it probable that "the stock collectively spread from the south or south-east, so that the swampy district of the Pripet was once its natural boundary to the south, and the original basis of its diffusion." An argument of J. v. Fierlinger's (*K. Z.*, xxvii. 480) tends to show, from the form of the name Νευροί, which is recorded by Herodotus, and in which the Balto-Slavonic phonetic law of the change of Indo-European *ev*, *eu* into *ov*, *ou* (G. ἔπλευσα, Lith. *pliuti*, O. *pluti*, *plova*) has not yet taken effect, that the Balto-Slavonic branch still formed one linguistic whole in the fifth century certainly.

Somewhat later are the first tidings of our own forefathers: when the bold Massiliote Pytheas undertook his voyage of discovery in the North Sea in B.C. 325, he found that on the Rhine the nation of the Celts gradually changed into another, for which he uses the indefinite term of Scyths. That he was the first Greek to come across the Teutons is placed beyond all possibility of doubt by the investigations of Müllenhoff,* at the same time Pytheas himself gives the German name (though transmitted in a Celtic form) of a German tribe, the Teutons, who two centuries later with the Cimbri made their march of terror upon Rome. Thus, then, we see that on the west, even in the fourth century B.C., the Rhine was the boundary, at least near the coast, between the German and the Celtic tongues.

But a careful examination of the names of the tributaries which empty themselves into this river on its right bank, has been undertaken by K. Müllenhoff (*D. A.*, ii. 207, *ff.*), and shows that the Celtic element in the interior originally stretched far beyond

* *Deutsche Altertumskunde*, i., Berlin, 1870; *cf.* the interesting and brilliant résumé of this work by W. Scherer, *Vorträge und Aufsätze*, p. 21, *f.*, 1874.

the Rhine, which itself probably rejoices in a Celtic name. The names of the rivers Main, Lahn, Sieg, Ruhr, Embscher, Lippe are of non-German, Celtic origin. At least, therefore, the watershed separating the Rhine from the Weser was originally the boundary between the Teutonic and the Celtic tongues; the latter of which, however, was probably heard as far as the mountain-wall of the Harz, the Thüringer Wald, and the Fichtel Range. The most ancient neighbours of the Teutons here were the *Volcæ*, whose name afterwards provided a designation for the whole Celtic stock (O.H.G. *Walh*, A.S. *Vealh*, O.N. *Valir*).

The first Teutonic people to appear on the stage of history in the east are the Bastarnæ, who even in the year B.C. 178 are mentioned as auxiliaries in the army of the Macedonian king, Perseus, in the war against the Romans. Their home lay on the northern bank of the Lower Danube, where they are expressly mentioned as ἐπήλυδες, "comers from abroad" (*cf.* K. Zeuss, *Die Deutschen und die Nachbarstämme*, p. 129). They may, therefore, be justly termed the forerunners of the Goths, who followed the same direction, but not until the second century after Christ (*cf.* K. Zeuss, *ib.*, p. 402), and whom at the beginning of our era we have to look for in the district of the Vistula, whence they, or tribes related to them, stretched probably as far as the Baltic provinces and perhaps as far as modern Russia.

Further south, the Vistula from primeval times formed the fixed boundary between the Teutonic and Slavonic elements. The origin of the name of this river (Germ. *Weichsel*, *Vixel*, Slav. *Visla*, Lat. *Vistula*), unfortunately can hardly be ascertained with certainty. It is sometimes regarded as originally and thoroughly Teutonic, sometimes as Slavonic, sometimes also as Slavo-Teutonic (Müllenhoff, ii. 207; J. v. Fierlinger, *K. Z.*, xxvii. 479). The last seems to be the most probable.

The original home of the Teutonic stock, therefore, proves to be a district drained by the Oder and the Elbe (both German names) in their lower and middle course, east as far as the Vistula, west to the Weser, that is, the boundary of the Celts, mentioned above.

The westernmost Indo-Europeans in Europe from the oldest times have been the Celts, who are mentioned as such even in Herodotus (vi. 49: *οἱ ἔσχατοι πρὸς ἡλίου δυσμέων . . . . . οἰκέουσι τῶν ἐν τῇ Εὐρώπῃ*). Their great development at one time on the right bank of the Rhine has already been mentioned. The middle of this stream's course is indicated as the centre of the Celtic power by the fact that it was from this point, from the ancient abodes of the Boii, who subsequently settled on the Upper Elbe, that both the great Celtic expeditions, the march of Bellovesus and Sigovesus took their start, the one spreading over the district of the Rhone and the Western Alps to Italy, the other over the Danube (Celto-Roman *Danuvius*, O.H.G. *Tuonouwa*, O.S. *Danavi*; Müllenhoff: *D. A.*, ii. 236, *f.*).

In Gaul itself, also, the Celts took possession of the north and centre of the country earlier than of the south. Until the expedition

of the Iberian Celts the Loire formed the western boundary; until the expedition against Italy the Upper Rhone above Lyons formed the southern boundary of the Celts (Müllenhoff, ii. 240).

From the north we now betake ourselves to the south of our quarter of the globe, beginning with the ethnology of the north of the Balkan Peninsula, which will prove to be an important centre of diffusion for Asiatic as well as European Indo-Europeans.

The wide stretch of country between the lower course of the Danube and the shores of the Ægean and the Propontis was occupied in antiquity by the tribes of the Thracians, which Herodotus (v. 3) regards as the greatest of all peoples next to the Indi. The scanty remains of the Thracian language (*cf.* P. de Lagarde, *Ges. Abh.*, p. 278, *ff.*, and A. Fick, *Spracheinheit*, p. 417, *ff.*) are enough to establish traces of its Indo-Germanic character but not enough to define its position in the Indo-European family more closely. Certain it is, however, that from hence a large part of Asia Minor received its Indo-Germanic population. In the first place, it is known that the Thracians themselves spread eastwards over the strait a considerable distance towards Asia (*cf.* Zeuss, *Die Deutschen und die Nachbarstämme*, p. 258). According, to the unanimous opinion of antiquity, again, the Phrygians emigrated from Europe and were originally connected with the Thracians. The Macedonians remembered the time when (Hdt., vii. 73) the Phrygians, then having the name of Βρύγες, were *συνοικοι* with them; and by Strabo (c. 471) the Phrygians are actually called *ἄποικοι τῶν Θρᾳκῶν* (*cf.* the other ancient authorities quoted by Fick, *ib.*, p. 408, *f.*). Nay, this eastern movement of the Indo-Europeans from the Balkan Peninsula may perhaps be traced still further. According to the information of the ancients (Hdt., vii. 73, and Eudoxus *ap.* Eustath.; *cf.* Zeuss, *ib.*, p. 257), the Armenians, again, were most closely connected with the Phrygians, so that this people also must once have had its abode in Europe.

The value of these ancient traditions is tremendously increased by the fact that they are confirmed by an examination of the languages of the peoples mentioned. This is most clear in the case of Armenian (variety of vocalisation; European *l*), which not only associates itself with the European languages in its phonetic character, but also can show in its vocabulary a whole series of terms peculiar to European culture (terms for plough, honey, salt, wine, &c.). As to Phrygian, the extremely scanty remains of this language (P. de Lagarde, *Ges. Abh.*, p. 283; Fick, *Spracheinheit*, p. 411) preclude any such certain opinion as in the case of Armenian; but Phrygian also shows a richly developed *r* and *l*, and a close connection with Armenian is at least probable (Hübschmann, *K. Z.*, xxiii. 48). Within the limits of the European group, again, Armenian ranks closest to the Lithu-Slavonic languages because of its treatment of the palatal *k*-series (above, p. 70), and the same may be assumed of Phrygian (*ζέλεια*, "vegetables," O.S. *zelŭ*) and Thracian (*ζέλαι*, "wine," above, p. 325).

The same remarks apply to the second branch of people occupy-

ing the north-west of the Balkan Peninsula, the Illyrians; the last linguistic remains of this branch are preserved in modern Albanian. According to the probable opinion expressed by H. Kiepert (*Lehrb. d. alten Geographie*, p. 240, *f.*), this tribe in pre-Hellenic times was widely spread over Greece under the name of Leleges.

Cutting through these tribes there must have been a movement of Indo-Europeans to the south, which in point of language betrays no contact with Slavo-Lettish, Albanian, Armenian (Phrygian and Thracian) in its treatment of the two palatal series, and which gave ancient Greece its classic population.

West of the Thracian district, in antiquity was the abode of the Macedonians, whose language, in spite of the scanty remains in which it is preserved to us (*cf.* A. Fick, *Ueber die Sprache der Macedonier, Orient und Occident*, ii. p. 718, *f.*), shows itself undoubtedly to be Greek and nearly related to Doric. There has then rightly been a tendency, gathering strength of late, to regard the tribe of the Macedonians as the portion left behind in the north, of the Greek people, whose original abode was at the foot of Olympus, and perhaps even further north still. From this point then the Greek tribes began gradually to radiate, first the Ionians, then the Æolians and Achæans, and finally the Dorians, whose migration concluded the Greek tribal movements and set the final stamp on the ethnology of ancient Greece.

A striking piece of linguistic evidence to show that the Greeks immigrated from the north, we have already made acquaintance with, p. 273, above.

As, however, Greece received its Hellenic population from the north, so it seems probable that the Italian tribes followed the same direction, and breaking through or driving forward the original Iapygian and Ligurian population, occupied the Apennine Peninsula. The advance of the Sabellian tribes southward, which ran on into historic times, and gave Samnium, Campania, and Lucania their Italian inhabitants, is rightly compared with the Dorian invasion and regarded as the final movement. The ancient power of the Umbrians in the north of the peninsula as far as the foot of the Alps, which is testified to by tradition and story, also deserves to be considered from this point of view. According to this, the Latin tribe would have settled west of the mountains, in the open plains (*cf.* Th. Mommsen, *Römische Geschichte*, i. p. 112, *f.*, and Kiepert, *Lehrbuch der alten Geographie*, p. 382, *f.*) at an earlier period, and without leaving any traces. Finally, if W. Helbig is right in his often quoted book, as in our opinion he is, in saying that the lake-dwellings in the plain of the Po are settlements "which were founded by the Italians during the most ancient period of their occupation of the Apennine Peninsula," we shall then have discovered the forefathers of the Italian tribes in their original Italian home.

The most obvious path for the Italians to follow in entering Italy is the wide and well-worn path of the nations around the Gulf of Venice. Hither, according to those who believe in a closer

connection between the Greeks and the Romans, came the Italian branch from the interior of Epirus, where, on this view, the Greeks and Italians went through the phase of culture peculiar to themselves (Helm, *ib.*, p. 54, *f.*; W. Helbig, *ib.*, p. 98). We cannot convince ourselves that such a Græco-Italian period ever existed (*cf.* above, pp. 72, 129). Yet we also have discovered traces indicating that the Italians had points of contact with the peoples that are or have been rooted in the north or north-east of the Balkan Peninsula, in proof whereof we point to what has been said above on p. 322 about the history of wine.

All the peoples of Europe thus far mentioned must—such was the result we came to in various passages of this book—once have spent a period together in which they made a number of advances in civilisation in which the Indo-Iranians no longer shared. Now is it possible to ascertain the scene of this joint European culture?

It is plain that theoretically there is no reason why this must necessarily be sought in our quarter of the globe. It is, however, also clear, that if there can be found in it a locality which satisfies all requirements, that is the place to which we must look in the first instance. Such a locality certainly does occur, and only one such locality, in our quarter of the globe.

North of the Pontus and the Caspian Sea stretches an area twice as great as that of the France of to-day, the district of the South Russian steppes, joining on the east the immeasurable steppes and wastes that spread as far as the foot of the mountain system of Central Asia, bordered on the north by the hilly, woody country of Central Russia, and bounded on the west by the forest-clad ranges of the Carpathians. The district thus marked out diminishes in its northern dimension from east to west, and the further west one goes the more it loses the characteristics of the steppe—absence of hills and of trees—except in the parts close to the sea. Indeed, the first outposts of the Carpathians appear on the borders of Moldavia and Galicia. Forests of oaks, beech, maple, alder, poplar, willow, lime, birch meet us—though to no great extent, and even then broken by broad, barren spaces—in Ukraine, Podolia, and the south of Little Russia, and low forests of firs and pines in the district of Kiev. In fine, the further north or west we go from the grassy, leafless steppes, the more the vegetation increases in strength and abundance until we are surrounded by the densest forest of Central Europe, that of the Carpathians and Volhynia.

Here, in these districts the fertile soil called "Tschernosem" or "black earth," which gives the south of Russia its priceless value, gave agriculture its first important part to play in the history of civilisation. As the Russian districts of Bessarabia, Podolia, and Kiev (as also the neighbouring kingdoms of Galicia and Roumania to the west) are amongst the granaries of Europe, so even in antiquity many nomad tribes made the change to agricultural life, the Kallipidæ on the Bug, the Σκύθαι ἀροτῆρες on the Bug and

Dniester, the Σκύθαι γεωργοί on the Dnieper (*cf.* above, p. 285, and Kiepert, *Lehrbuch der alten Geographie*, p. 341).

This area, therefore, bounded on the south by the Danube and the sea, on the east by the Dnieper, on the north by the forest and swamps of Volhynia, on the west by the Carpathians, this, and in my opinion this alone, fulfils the conditions which we require of the scene of the development of European culture.

If we picture to ourselves the European members of the Indo-Germanic family pouring along no matter from what quarter of the interior of the South Russian steppes, the Carpathians on the west, and the primeval forests on the north must have called an imperative halt to the march of the advancing bands. Here the nomads accustomed to the treeless steppes found themselves surrounded by the vegetation of the Central European forest, and were invited to develop a more exact nomenclature for the various trees (*cf.* above, p. 271). Here the oak may have become the abode of the supreme God, and the grove the temple of the denizens of heaven (*cf.* above, p. 278, *f.*). Above all, the longer the advance northwards and westwards continued, the more closely the peoples became packed; and the more scarce in consequence the pastures (which in this district are not too abundant) became, the greater was the compulsion on the nomad to put his unaccustomed hand to the plough, which, fortunately for him, here struck upon a fertile portion of the earth; hence the simple and unforced explanation of both the creation of a new terminology for the Central European forest, and of that development of agricultural language which is confined to the European branch of the Indo-Germanic family (*cf.* above, p. 283).

Further, another set of smaller points, characteristic of the European branch of the Indo-Germanic family, seem to find their explanation here. In the district described, where the majority of the Indo-European tribes were settled, the beech is indigenous; the Slavs alone are to be conceived to have dwelt mainly or entirely beyond this tree's easternmost limit, which cuts through the country between the Dniester and the Dniepet (*cf.* above, p. 273, *f.*). Here the immigrants may have come across the honey, which was, perhaps, only brought to them in the way of barter in the primeval period, and the insect that produces it, in the forests of their new home (*cf.* above, p. 321). Here, too, new beasts of the chase, such as the buck and the roe (*cf.* above, p. 218), may have met them; indeed, if we extend the incursions of the lion but a little beyond the area in which they are actually vouched for (*cf.* above, p. 250), this terrible beast of prey, which probably had wandered hither from Asia, may have assailed the cattle-drawn wagons of the Indo-Europeans, as in after times it terrified the camels of Xerxes. Here the Indo-Europeans may have had a new world opened to them as they gazed for the first time upon the sea (*cf.* above, p. 353), and if they had not made acquaintance with the condiment of salt while they were yet united with their Asiatic brethren (*cf.* above, p. 318), here, in the swamps in which

most rivers of the steppes empty themselves, lay the mineral in tangible crystals before them.

Finally, it is from the locality just described that we can most readily and most easily understand the movement of the separate Indo-European peoples into their oldest historical abodes, as we endeavoured to determine them above.

In the almost impenetrable primeval forest, which at that time covered not only the back, but also the limbs of the Continent, the beds of the rivers, and the coasts of the sea, must have been the only and the welcome guides of the hosts on their forward march. These therefore, we may take it, generally determined the line of migration followed by the European members of the Indo-Germanic race. And from what part of Europe do more roads of this description lead, or in more various directions, than from the locality which we have claimed as the place of the prehistoric connection of the European peoples?

Thus the Slavs and Lithuanians may have followed the Dnieper up-stream, and thus have reached their abode described above on the middle of this river's course, or rather north of the Pripet. The Teutons following the course of the Dniester, and leaving the sea to the south (above, p. 254, note), could cross over here to the basins of the Vistula and the Oder. Advancing south of the Danube, along the coasts of the Pontus, Illyrians and Thracians populated the north of the Balkan Peninsula, thence to despatch kindred tribes (Phrygians and Armenians) to Asia Minor.* Through their ranks the warlike people of the Greeks forced their way to their abodes at the foot of Olympus, where the Macedonians continued to abide till later.

The course of the Danube, we imagine, was followed by the Italians and the Celts, who continued together for some considerable time, and who, as it becomes every day more probable that they are closely connected in language, may be assumed with probability to have passed through an Italo-Celtic period. The Slav may have pointed the Italians the way to the Apennine Peninsula, but the Celts marched further up the Danube, thence to cross into the basin of the Main and the Middle Rhine, where we find them in their most ancient historical abodes. Here new relations bound them to the Teutons, now their neighbours.

These are the most important Indo-European peoples who have attained any historical significance, and thus have come to our knowledge. No one will believe that they exhaust the number of clans and tribes which in the course of their wanderings entered the interior of this continent. Many may have been absorbed by other Indo-Europeans, many by foreign peoples, whom we must imagine to have existed especially in the west and south of our quarter of the globe; many may have perished in other ways. Amongst them

* Georg Meyer (*B. B.*, x. 147) would count the Carians and Lycians among this section of the Indo-Europeans.

the oldest inhabitants of the lake-dwellings are to be counted, if we are right in conjecturing them to have been Indo-European.

The Indians and Iranians can be dismissed more briefly than was the case with Europe. It is beyond doubt, to begin with, that India was populated by the Sanskrit people from the north-west, a movement which is depicted in the hymns of the Rigveda as being in course of progress. The Indians of this age, whose principal abode is to be looked for on the banks of the Sindhu (Indus), have as yet no direct knowledge of the Ganga (Ganges), which is only once mentioned in the Rigveda. Nor do their settlements seem to have reached as far as the mouths of the Indus, as far as the Arabian Sea, at that time (*cf.* Zimmer, *Altind. Leben*, p. 21, *f.*). The gradual advance of the Indian tribes southwards and eastwards is mirrored very vividly in the different divisions and names of the seasons of the year in the more recent periods of the life of the Sanskrit language, as we have shown in detail above, pp. 304–306.

It is obvious, therefore, that we must locate the place of this pre-historic phase of Indo-Iranian culture to the west, or, since the migration into the valley of the Indus can only have followed the ancient trade-route and path of the nations along the Cabul, to the north-west of the Indus. But, as there are clear indications in the history of the Iranian peoples (*cf.* Kiepert, *Lehrbuch*, § 57) that the most ancient period of Iranian occupation was over "before the conquest and occupation of the west of the Medo-Persian territory, lying to the east of the great desert," it seems to me that from the nature of the case it is just this eastern portion of Iran, the ancient provinces of Sogdiana, Bactriana, and the region of the Paropamisus, to which we must look in the first instance for the home of the Indo-Iranians.

If we imagine that it was from some, for the moment undetermined, portion of the steppe district of Europe and Asia that they migrated to this their new home, by the Aral Sea and up the Oxus and Jaxartes, the mountains which they encountered, and for which there is not wanting expression in the original Indo-Iranian language,* must have restricted the extent of pasturage necessary for nomad life, and have urged the inhabitants to till the valleys which are frequent and extensive on the Upper Oxus and Jaxartes, and adapted to farming; while, on the other hand, the hilly, steppe country in the neighbourhood which was only fit for pasture determined the continuance of a nomad form of life (Kiepert, § 55).

* Sans. *párvata, parvati* = Zend *paurvata*, "hill" (whence *Paretákene* on the Upper Oxus).

Sans. *giri* = Zend *gairi*, "hill" (only elsewhere in Slavo-Lett. *góra, gire*, "forest;" *cf.* below).

Sans. *ménakâ*, "mountain nymph" = Zend *Maénaêha*, proper name of a mountain.

The forest, too, as would seem, gained in importance in the language of the Indo-Iranians; *cf.* Sans. *vána* = Zend *vana*, Sans. *vrikshá* = Zend *vaêsha* &c. The absence of identical names for the various kinds of trees will then be explained by the reasons given above, p. 117.

In fine, the geographical conditions were identical with, or similar to, those which we found prevailing in the place of the period of joint European culture. So, too, the influence of the soil on the inhabitants must have been identical or similar (*cf.* above, pp. 284, 298, *f.*).

Here, in the valley of the Oxus and the Jaxartes, above all on the banks of the principal river of ancient Sogdiana, which the immigrants first struck, the Polytimetos or Zerafschan, "the gold-bearing," the Indo-Iranians, still united, may have learned the first tidings of the gold which was unknown to the original period (*cf.* above, p. 172).

The primitive abode of the Indo-Iranians was not situated by the sea, and this is probable from the point of view of language (Spiegel, *Arische Periode*, p. 27; *f.*).

Finally, we have here the simplest explanation of one of the closest bonds that unite the two peoples, that is, their agreement in a series of geographical names, especially names of rivers.* We have here specially to consider:—

Zend *raŋha* (Ἀράξης, sometimes probably the Jaxartes,† Syr-Daria) = Sans. *rasâ* (a mythical stream of the far north).

Zend *haraḫvaiti* (Ἀραχωτος, *Arghandâb*) = Sans. *sárasvatî* (*Indus, Gaghar*, and other rivers).

Zend *haróyu* (Ἄρειος, *Heri-rûd*) = Sans. *sarâyu* (probably a river of the Penjab).

As regards the explanation of these agreements, inasmuch as we cannot in any case, after what has been said above, start from the Indian rivers, there are three possibilities: either the names in question were attached in the Indo-Iranian period to no fixed localities, but still had a general meaning (*rasâ*, "fluid," *sárasvati*, "district abounding in rivers"); or, they were names of definite rivers of the original Indo-Iranian country, which was neither Iran nor India, and were transferred independently by both peoples to the streams of their new abodes; or, finally, the Iranian give the Indo-Iranian meanings, because East Iran was the ancient abode of the Indo-Iranians.

I confess that the latter opinion, represented and amply supported by W. Geiger, seems from the point of view of the present work to be the most probable, and I, therefore, entirely subscribe to the views of this scholar as to the original home of the Indo-Iranians, which he thus sums up (*Museon*, p. 81, 1884): "Le pays des Indo-Irâniens s'étendait des rives du Syr-Daryâ, vers le sud, sur Bokhârâ, l'Afghânistân, et une partie du Baludjistân, jusqu' aux frontières du Pendjâb (Zend *hapta hindavo* = Sans. *sapta sindhavas*). Les Irâniens de l'Avesta habitaient encore en général l'ancienne patrie aryaque."

Thus far then, in the question as to the original home of the Indo-Europeans, we have obtained two fixed points from which we

* *Cf.* for further details, W. Geiger, *Museon*, iv. 1, *f.*

† According to Justi, Zimmer, Geiger, and others.

must now try to advance with caution: they are the scene of the period of joint European culture, bounded by the lower Danube, the Transylvanian Alps, the Carpathians, and the Dnieper; and the original home of the Indo-Iranians in Eastern Iran.

Where, then, are we to imagine the common source whence these two main streams of Indo-European national life alike spring?

In order to determine it, let us first follow a very obvious, though at first sight somewhat mechanical, line. Let us, that is, start by assuming that in leaving the steppe district of Europe and Asia, from which they came to their abodes as determined above, both branches, the European and the Indo-Iranian, removed equally widely, *i.e.* to equal distances, from their hypothetical starting-point. Then a line drawn from the mouth of the Danube to the middle of the Volga's course, say to the point where it bends farthest eastwards, where the Samara joins it, will be equal in geographical length to another line drawn from the latter point to the Upper Oxus or Jaxartes. This, then, will bring us to the south-east of Russia in Europe and to the Middle Volga as the main artery of the original Indo-European home, and the question presents itself whether the locality, thus provisionally assigned, can be supported by further observations.

To begin with, I should like to refer to the description given above on p. 266 of the pastoral life of the Indo-Europeans in the most ancient times, from which it appears that they were acquainted with the horse (probably only semi-domesticated), but not with the ass and the camel. Now, as we found that the last two animals can be traced back to the primeval period of those peoples whose original abodes are certainly to be looked for in Asia, viz., the Semites and the Turko-Tatars, and as we also saw that these animals whether wild or tamed, became known to the Indo-Iranians before they separated, and when they entered Asia, I am consequently of opinion that the absence of the ass and the camel, together with the presence of the horse, in the pastoral life of the Indo-Europeans, is in favour of our looking for the original abode of the Indo-Europeans rather in the European than the Asiatic portion of the steppe district.

Further, the locality proposed by us for the original home of the Indo-Europeans, affords the simplest explanation of the manifold points of contact between the Finns and the Indo-Europeans, in language and in habits, to which we have referred in various passages of this work. We have called attention to the difficulties of this yet unsettled question on p. 103, *f.*; but thus much may be conceded to W. Tomaschek, the champion of this theory, that there is considerable probability in favour of the prehistoric contact between the Finns and the Indo-Europeans which he assumes. *Cf.* also above, p. 385. Now, north of our hypothetical home for the Indo-Europeans, on the Middle Volga, we at once enter the district occupied as far as the Ural by the Finns from the most ancient times (Müllenhoff, ii. 75). Above all, we should be inclined to count amongst the loans from the Finnic world to the Indo-Europeans the knowledge

of copper, a metal which in the mountain-gorges of the metal-liferous Ural has been worked from the remotest times by peoples (Tschuds) whose ethnology cannot be determined exactly, but who probably belong to the Finn race (*cf.* above, p. 187, and Peschel, *Europa*, p. 126).

Finally, I believe I can show it to be probable that the river which, in our view, was the principal stream of the original Indo-European home, long before it was called the Volga, or Adel, or Idel (amongst the Turks), or Rau (amongst the Finnic Mordwins), bore a name of primeval Indo-European stamp. The ancients (Ptolemy) first have recorded, as one of the names of the Volga, *Pa*, which coming from **Pa-Fa* undoubtedly reproduces the above-mentioned Finnish name Rau or Rawa (Müllenhoff, ii. 75). This name cannot, as far as I have been able to discover, be explained from Mordwinic or Finnic[1] generally, though it does correspond precisely, according to Finnic-Ugrian phonetic laws which only allow simple sounds at the beginning of a word, to a primeval Indo-European **srávā*, "the stream," which is pointed to by Sansk. *srava*, *giri-srávā*, "mountain-stream," O. Bulg. *струя* (**srovā*), Lith. *sriovė*, and belongs to the root *sru*, *sru*, "flow" (whence also Strymon). Those Indo-European peoples from whom at a later time the Finns (Mordwins) might have borrowed it, the Slavs and the Iranians, are just the peoples who have no corresponding word for "river" (except O.S. *ostrovŭ*, "island"). The evolution before us then is as follows: the Indo-Europeans termed the mightiest river in their home *srávā*, *i.e.*, "stream." This term continued to stick to the river even after their departure, because the Finns, who probably advanced southwards along its banks, took it over in a form conformable to the laws of their own language, Rawa. From them the Greeks learnt it (Pā = Pa - Fa). The Turks also called it the "great river," for that is the meaning of Adel, Idel, amongst them (Müllenhoff, ii. 75, note).

Thus, considerations of different kinds have led us to the conviction that the central point of the original Indo-European home is to be looked for on the banks of the Volga. As to its extent nothing definite can, of course, be said. Yet it will be well to imagine the geographical continuity of the Indo-Europeans before their division into eastern and western Indo-Europeans, as covering a relatively wide area. 'A nomad population, as the Indo-Europeans were in prehistoric times, needs for its support a wide stretch of country. According to A. Meitzen (*Verh. des zweiten deutschen Geographentags zu Halle*, p. 74, *f.* 1882), a nomad family in Upper Asia needs for its support about 300 head of cattle, which in Upper Asia, Turkestan, and the south of Siberia, require not less than one-sixth of a geographical square mile of pasturage. "A tribe of 10,000 persons would need 200 or 300 square miles." On the fertile soil of the South European steppes these figures would admit of reduction.

[1] In Mordw. "river" is *ld*, in Moksa *lei*, *oča*, *muiarks*, Ceremiss. *ашт* (*cf.* Klaproth, *Asia Polygl. Language-atlas*, p. xiv).

We may imagine that the expansion of the Indo-Europeans in the earliest times was directed to the south-west and the south-east rather than to the south (along the Volga) for the simple reason that the waste and sandy steppes of the Caspian would be avoided as long as possible (*cf.* the map of the flora of Asia and Europe in O. Drude's *Atlas der Pflanzenverbreitung*). Thus it came about that the Indo-Europeans before the dispersion were unacquainted with the sea.

It remains for us to give, as it were, the proof of the above calculation, and to consider briefly the question whether and how far the physical geography of the South Russian steppes satisfies the requirements of the stage of culture which the previous pages have ascribed to the Indo-Europeans.*

After what has been said above (p. 116, *f.*) stress will be principally laid on the positive agreements, though for the sake of contrast the negative ones will not be omitted.

To begin with the climate of the South Russian steppe, it is characterised by an extraordinary cold, snowy, and snow-stormy winter, the length of which is estimated by the natives at six months, and by a (usually) intolerably hot summer. The transitions from the one season to the other are so abrupt and rapid that "it is scarcely possible to speak of spring and autumn" (*W.*, 94; *K.* 3, 49, 50, 62). It is enough for our purpose to refer to p. 301 above for the division of the Indo-European year into two parts, and for the importance of the winter in the Indo-European computation of time.

Apart from the climate, the peculiar character of the steppe appears in three marked features, which we may designate briefly as absence of forests and trees, absence of mountains and valleys, and abundance of rivers. The poverty of the Indo-European language in names for forest-trees is in harmony with this, and has been already sufficiently insisted upon (above, pp. 271, 286).

The individual species of trees known to the Indo-Europeans we shall return to subsequently.

As to contour, the steppe must not be imagined as a perfectly level plain; on the contrary, owing to the action of water, numerous trenches and banks have been formed in the plateau of the steppe, the heights and depressions of which, however, are so inconsiderable that to an eye looking over the country from a distance, there seems nothing but a level surface extending beyond the range of sight. It was quite impossible that a copious terminology for the ideas raised by the contemplation of mountains should grow up. Nor can any such terminology be established by Indo-European equations. Pictet's opinion to the contrary (*Origines*, i. 122, *f.*) is based on a number of perfectly untenable etymologies, of which the above-mentioned Indo-Iranian one (which recurs in Lithu-Slavonic), Sans. *giri*, Zend *gairi*, O.S. *gora*, Lith. *girė*, "forest,"

* Our statements as to the South Russian steppes are based mainly on the admirable and standard work of J. G. Kohl (K.), *Reisen in Südrussland*, Teil 1–3, Dresden and Leipzig, 1846–47; *cf.* also *Russland; geschildert von F. Meyer von Waldeck* (*W.*), i., Leipzig, 1884.

alone has any durability. From our point of view, the undulating wooded hills of Central Russia, which rise to the north of the original home, may have been meant.

In many parts of the steppe artificial hillocks, which are popularly called "Turks' hills," break the uniformity of the landscape. "They are heaps of earth, as a rule 7 or 8 metres high, situated on the top of the highest eminences . . . . they are distributed in such a way over the steppe that usually from the top of one of these hillocks it is possible to see another from any one of the four sides" (*W.*, 92). It is, perhaps, not too bold to allow these to remind one of the Indo-European πόλεις mentioned on pp. 140; 403 above. That the Indo-Europeans were well acquainted with water-courses is shown by what has preceded (above, p. 138). Reference might also be made to the equations O.H.G. *quma* = Lat. *aqua*, Sans. *udán*, G. ὕδωρ, O.S. *voda*, Goth. *wato*, and to the roots *plav*, *plu*, *plud* (*fließen*, *fluss*), and others.

Rich, however, as South Russia is in mighty rivers, they have never constituted any serious obstacle to the onward march of nations, and the reason may be that the greatest of these rivers, even the Volga, is extremely rich in shallows, and varies in its upper course from 12 to 2 feet in depth, and in its lower from 40 to 3 (Daniel, *Handbuch der Geographie*, ii. 890).

On Indo-European fords see above, p. 352.

The soil of the steppe generally is uncommonly rich in salt, so that as linguistic evidence also points this way (p. 318), it is perhaps more probable that the failure of the Indo-Iranian languages to participate in the joint European term for salt is due to the former having lost the word at some later period.

We now proceed to treat of the animal, vegetable, and human life that developed on this soil.

Trees are only found in the steppe in isolated instances along the sides of rivers. Amongst them Peschel (*Europa*, p. 131) especially mentions the birch (*cf.* above, p. 271), which occurs, under favourable conditions, even in the otherwise treeless steppe country of Orenburg. Drude's map of the flora of Europe also mentions the *betula alba* in the approaches to the steppe country. Grisebach (i. 463) remarks that the underwood which lines the banks of the rivers in the steppe consists mainly of willows (*cf.* above, p. 271) and poplars.

Wild fruit-trees are said to be found far into the steppes, at any rate on the west (*K.*, 3, 75). The place of forest is taken by thorn-bushes, and above all by reeds,* which grow to a considerable extent especially on the banks of the larger rivers, attain a height of from 3 to 4 metres, and harbour many land and water animals of prey (*W.*, 95; *K.*, 3, 77). Rushes in the steppe in many respects supply the place of wood, which is scarce, as fuel, roofing, wattle-work, &c.

Sans. *nadá*, *nadaka* (?), G. νάθραξ, νάρθηξ, Lith. *nendrė*, Lat. *combrētum*, Lith. *szeszdrai*; Goth. *raus*, Lat. *ruscus*.

In the animal kingdom the beast of prey, *κατ' ἐξοχήν*, is the wolf. To show the importance of this beast in the original Indo-European period (above, p. 247), it may be added that this is the only wild animal whose name has a clear feminine form belonging to the original language to pair with it (O.H.G. *wulpa*, M.H.G. *wülpe*, O.N. *ylgr* = Sans. *vṛkī*). Again, the other quadrupeds which were ascertained above to be Indo-European—the hare, the mouse, the polecat and marten (*K.*, 3, 116; *W.*, 96), the wild-boar (now only in the Caucasian steppe; *K.*, 3, 267, 276), the otter (Brehm, *Tierleben*, pop. ed., 1. 301)—are expressly mentioned as inhabitants of the steppe, or as in the case of the beaver (Brehm. *ib.*, i. 450), may be assumed to be so.

The fox, common in the steppe, seems to be confined linguistically to Europe (above, p. 247). I find no Indo-European equivalent for a quadruped very characteristic of the steppe, the marmot-like creature called Susslik. A difficulty is caused by the presence in the Indo-European fauna of the bear (above, p. 247), which is obviously no real inhabitant of the steppe. We must, therefore, shift the abodes of the Indo-Europeans sufficiently far north for incursions of bears from Central Russia and the Ural into the steppes to be conceivable. Amphibious creatures abound in the steppe, particularly snakes (*K.*, 3, 143), with which the colonists had to wage regular war (*cf.* above, p. 258), tortoises,* and frogs.†

Amongst the insects the bee, frequent as it is in the Ukraine, Little Russia, and Podolia, does not occur in the steppe itself (*K.*, 3, 171). One of the most terrible plagues to the inhabitants of the steppe at the present day is the attack of swarms of grasshoppers; it is, however, not improbable that these are relatively late emigrants into South Russia (*K.*, 3, 151, *f.*).

The bird-world of the steppe has experienced a variety of changes and received many additional species since the introduction about a hundred years ago of horticulture, farming, and afforesting (*K.*, 3, 137). Birds of prey are very common, such as the eagle, falcon, hawk (*cf.* above, p. 252), which soar above the wide expanses of rushes and reeds watching for their prey, wild ducks, geese (above, p. 252), pelicans, and also herons and bustards (*W.*, 96). Further, the dove (above, p. 253), the owl (above, p. 251), the hen (above, p. 251), the crane (above, p. 251), and other kinds of birds are mentioned as inhabitants of the steppe.

In fish the South Russian streams, especially the mother Volga, are uncommonly rich. The failure, therefore, of the Indo-Europeans to observe them (above, p. 118) cannot be due to anything in the nature of the locality, indeed there is no hypothetical original home for the Indo-Europeans in which it conceivably could. It has its root rather in the general conditions so characteristic of the nomad-stage in the history of culture, to which navigation and fishing are foreign (above, p. 353).

* G. *χέλυς*, *χελώνη*, O.S. *želv* (Sans. *kar-manda* ?).

† For this animal the only equation known to me is O.S. *žaba*, O.Pr. *gabawo*, O.D. *quappa*.

In this locality a form of civilisation, but little affected by the advance of modern Europe, has developed from ancient times—a civilisation which reflects even at the present day many features of the primeval Indo-European period with absolute fidelity. "It is inconceivable," says Kohl (3, 53, 67), "when looking at the steppe, how a man could hit upon the idea of settling down to farm in the steppe, the whole nature of which cries out against such a perversion." Herds and hinds are the mark and seal of the steppe. Here sheep, cattle, and the Tabuns, i.e., half-wild herds of horses, still constitute the principal fortune of the owner. Goats also are to be found amongst the flocks of sheep, and are used to lead them (*K.*, 3, 228). Dogs, which easily run wild, are found distributed in enormous quantities over the steppe. The herds follow the clumsy cattle-drawn wagons of the hinds, for the ox is still the principal, if not the only, beast of burden here (*cf.* above, p. 260). A new phenomenon in certain portions, even of the European steppe, is the camel imported by wandering Turco-Tataric herdsmen.

Here the native still clothes himself in the hide of his own cattle. For at least six months of the year its hard winter sheep-skins are indispensable, and he frequently has them ready in spring, and even in summer (*K.*, 3, 46). In the way of arts, the manufacture of felt is one of the main occupations of all steppe peoples (*K.*, 3, 272, and above, p. 328).

Here the inhabitant of the steppe digs his dwelling (called "Semlanken") to the present day in the earth as his best protection against the terribly cold winter and the oppressive heat of summer, for the ridge alone is visible covered with earth and turf. For the cattle, too, special holes are dug (*K.* 1, 260, *f.*, and *cf.* above, p. 340, *f.*). It would be easy to multiply the parallels here drawn between the condition of the most ancient Indo-Europeans and the conditions of life on the steppe, which have always stamped their mark afresh upon the hordes of men who have swept tumultuously across the land. But we believe that what has been said is enough to show that general considerations drawn from the history of culture and the arguments of linguistic palæontology thoroughly warrant the assumption to which we were led above, viz., that it is in the steppe of South Russia that the scene of the most ancient period of Indo-European development, the original home of our race, is to be looked for.

In the oldest times known to history, we find the northern shores of the Pontus in the possession of the mysterious people of the Cimmerii; after that, the Scythæ spread to the west of the Tanais, the Sarmatæ to the east. It can be no part of my purpose to discuss the ethnological difficulties which these people present to the investigator.* Only thus much I may point out, that it seems to me impossible that these tribes, which sometimes betray Indo-

* In this connection W. Tomaschek's "Kritik der ältesten Nachrichten über den Scythischen Norden" (*Sitzungsb. d. Kais. Ak. d. W. in Wien*, cxvi. cxvii.) is important.

European features, sometimes altogether Asiatic and Mongolian, can be regarded as forming an ethnological unit. After the departure of the Indo-European clans from the district in question, Finnish tribes from the north, Turkish from the east, may have advanced towards southern Russia, possibly subjugating and absorbing considerable remnants of the Indo-European peoples. Then from the south-east there undoubtedly was, as the Scythian proper names explained by Müllenhoff show, a back-wash, and considerable conquests were made by the Iranians. But these are all events which took place long after the epoch with which we are engaged.

One endeavour to determine the original abode of the Indo-Europeans has been, in accordance with the character of the whole of this book, essentially based on the history of culture and on language. It is in the present stage of research, the only way by which it is possible to approach the problem with some hope of success.

How the proposed hypothesis as to the original home of the Indo-Europeans will be affected by anthropology, when its results have been sifted as we may expect them to be (above, p. 113, *f.*), how it will be affected by the discovery of prehistoric remains, when the treasures concealed in the soil of South Russia have been fully brought to light and thoroughly examined, remains to be seen.

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